SERVICE MANUAL 6370Q

marantz

model 6370Q

Turntable

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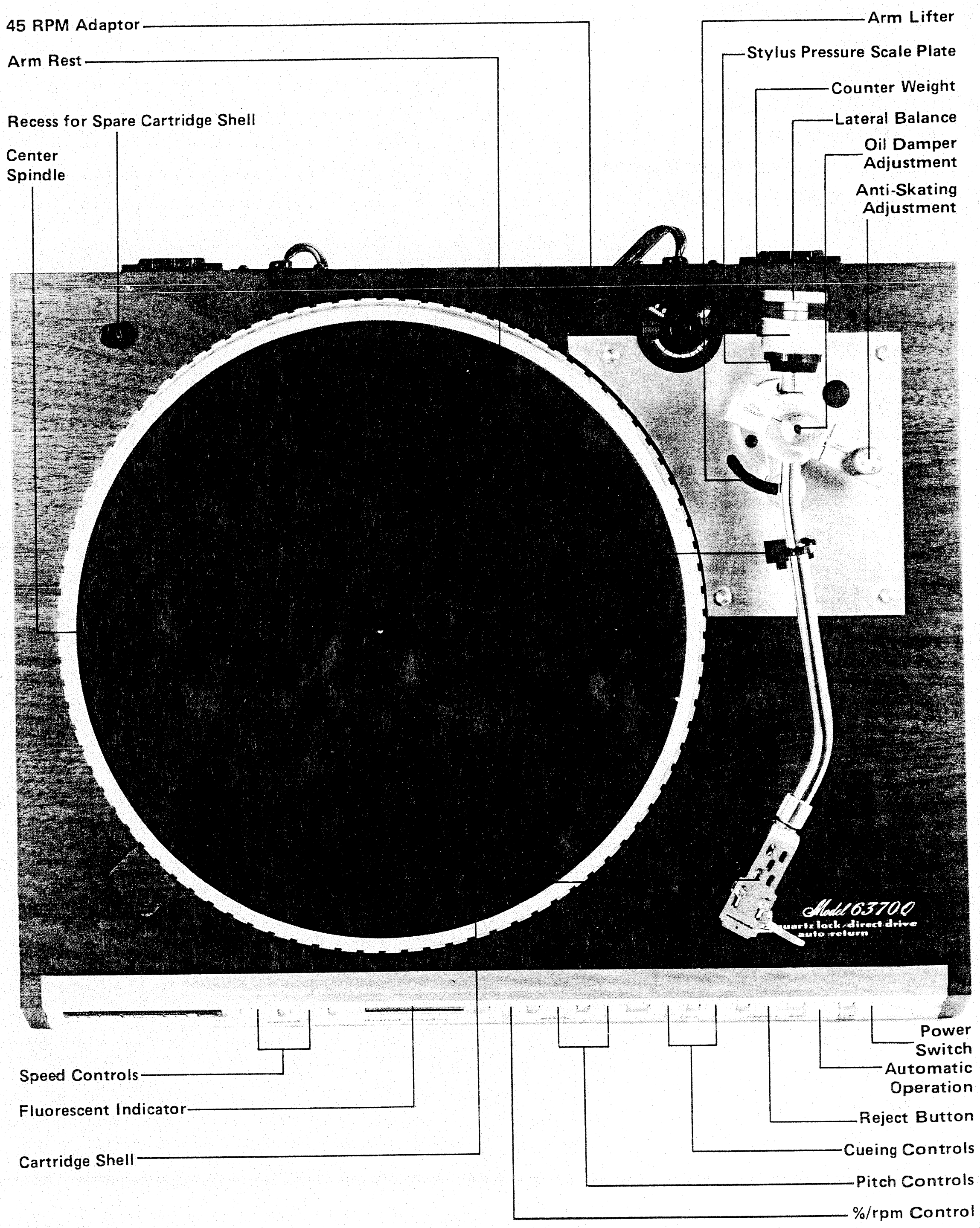
MARANTZ MODEL 6370Q TURNTABLE


45 RPM Adaptor
Arm Rest
Recess for Spare Cartridge Shell
Center Spindle
Arm Lifter
Stylus Pressure Scale Plate
Counter Weight
Lateral Balance
Oil Damper Adjustment
Anti-Skating Adjustment
Model 6370Q
Speed Controls
Fluorescent Indicator
Cartridge Shell
Power Switch
Automatic Operation
Reject Button
Cueing Controls
Pitch Controls
%/rpm Control

1. MECHANICAL OPERATION

1.1 Auto Mode

When in the AUTO mode the tone arm will lift up and the turntable will stop automatically when the record has finished playing. Operation is as follows:

1. Depress the **AUTO/MANUAL** pushswitch.
2. Depress the **POWER** switch. The turntable will not rotate yet.
3. Position the stylus over the first groove of the record. Now the turntable will start, the arm will slowly descend.
4. Press the **CUE DOWN** button.
5. When the record finishes playing, the arm will lift and return to the arm rest and the turntable will stop.
6. To lift the arm and stop the turntable before the end of the record, press the **REJECT** pushbutton.

1.2 Manual Mode

1. Turn on your amplifier system and select the Model 6370Q Turntable as the source input.
2. Place a record on the turntable. For a 45 RPM record, fit the supplied adaptor over the turntable center spindle.
3. Place the turntable in MANUAL mode (pushswitch released).
4. Depress the **POWER** switch. The turntable will rotate. While the record is turning, you may wish to clean its surface with a suitable cleaning device before playing.
5. Press the **CUE UP** button.
6. Select the desired speed (33 or 45).
7. Take the arm out of the arm rest and position the
8. Press the **CUE DOWN** button. The stylus will slowly descend to the selected groove. A small amount of practice will enable precise record cueing.
9. To lift the tone arm at any time, press the **CUE UP** pushbutton.
10. To stop the turntable, press and release the **POWER** pushswitch.

If you wish to clean the record as it rotates on the turntable, leave the arm on the arm rest and press the **CUE DOWN** pushbutton (press the **CUE UP** pushbutton after cleaning to avoid stylus damage due to hand lowering), or temporarily put the turntable in the MANUAL mode.

2. PRINCIPLE OF OPERATION

2.1 Auto-Return Method

In practive, there are two auto-return methods. One is position detecting, where the stylus position on the lead-out groove is detected. The detected position differs between LP and EP discs. The other method is velocity detecting, where tone arm velocity change is detected when the stylus goes into the lead-out groove.
Circuit P400 is for auto-return. A photo-interrupter and a slit are used and a change in the amount of light triggers the Q407.

2.2 Principle of Up-down Reject Operation

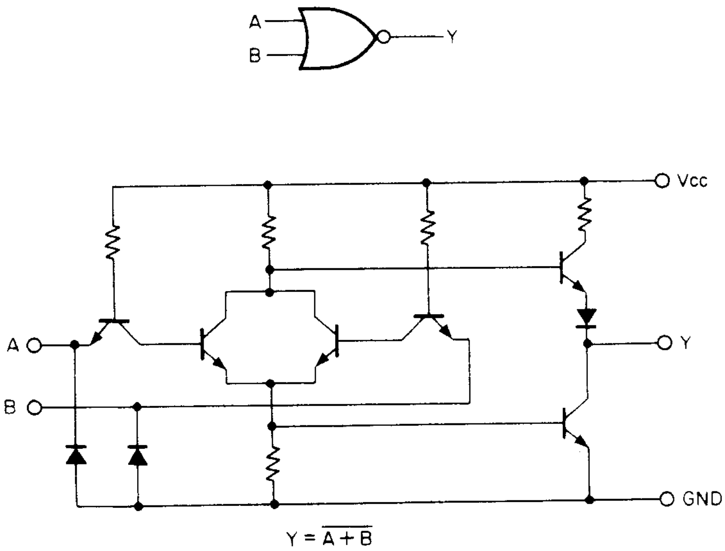
For the first time with our products, a motor is used for up-down lifter reject. This motor is also used for arm return, rotating in the direction opposite that for up-down reject. Rotational direction is switched by applying a TTL logic level signal to Q166.

2.3 Operation of NOR and D-F.F.

4 NOR circuits are packaged in the Q167. Output of each NOR is "L" when either input is "H". (H=3.0V, L=0.2V)
A D-F.F. has many applications. In this system, the PR and D inputs are held at "H". When the CLR input is "H", the output Q and Q̄ are "L" and "H", respectively. When an "H" pulse is applied to the CL input, the output state is inversed, that is, Q is "H" and Q̄ "L". This state is held until the CLR input is turned to "L".

NOR Circuit
D-type Positive-edge-triggered Flip-flop

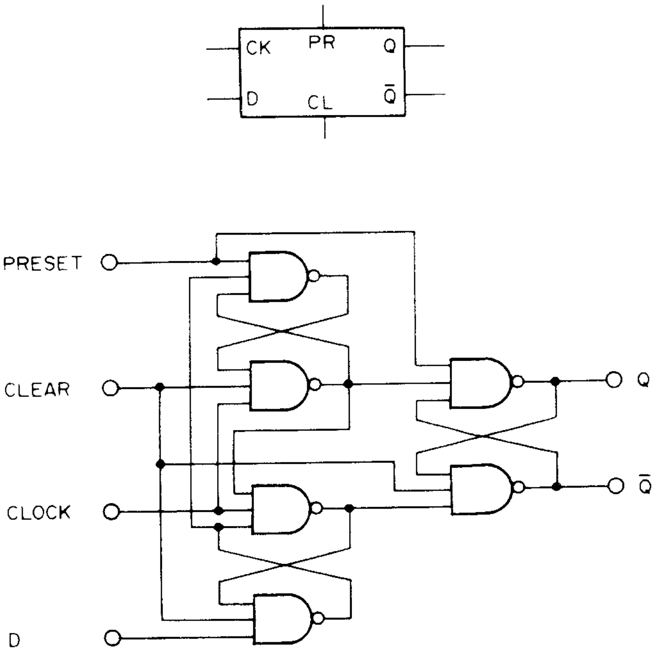
Note: 1. CLEAR and PRESET are "H".
2. D and CLOCK are "H" or "L"
3. * indicates unstable state.



$Y = \overline{A+B}$

A	B	Y
L	L	H
L	H	L
H	L	L
H	H	L

Figure 1.



D-Mode (See Note 1.)

tn	tn+1	
D	Q	Q̄
L	L	H
H	H	L

R-S Mode (See Note 2.)

INPUTS		OUTPUTS	
CLEAR	PRESET	Q	Q̄
H	L	L	H
L	H	H	L
L	L	H*	H*
H	H	D-Mode	

Figure 2.

3. ADJUSTMENTS

Although the cartridge is mounte

Although the cartridge is mounted, the turntable is not yet ready to play records. First, stylus overhang must be checked, then the tone arm balance, lateral balance, tracking force, anti-skating force, oil damper and pitch adjustment. The following paragraphs will explain these adjustments.

3.1 STYLUS OVERHANG

The Model 6370Q Turntable is designed to operate with the least distortion when the tip of the stylus is at a particular distance from the tone arm pivot. For this reason, the cartridge shell is slotted, allowing the cartridge with its mounting screws to be slid toward or away from the pivot. This, in effect, changes the radius of the arc described by the stylus. Supplied in the accessory kit is a 45 RPM spindle adaptor. The adaptor has been specially marked with a scale to aid you in setting the proper stylus overhang. Proceed as follows.

1. With the turntable unplugged, place the 45 RPM adaptor on the center spindle with arrow pointing to the rear of the turntable.
2. Temporarily screw the counterweight inwards (toward the pivot).
3. Remove the arm from its arm rest and remove the protective cover (if any) from the stylus.
4. The 45 RPM adaptor is calibrated to assure the minimum amount of distortion. Place the stylus tip over the line corresponding to 17 mm on the 45 RPM adaptor. It is all right for the stylus to gently touch the adaptor for checking purposes, but do not exert any downward pressure on it, or the stylus may be damaged.
5. If the stylus does not align with the "17" marking on the scale, then adjustment is necessary. Place the arm in the arm rest, loosen the cartridge mounting screws, adjust, and measure again.
6. Make sure that the cartridge is installed straight, the sides of the cartridge must remain parallel to the sides of the shell.
7. When you are sure the cartridge is in the correct position, place the arm in the arm rest and snug up the mounting screws.

3.2 VERTICAL TONE ARM BALANCE

The adjustable counterweight at the end of the tone arm establishes tone arm balance and stylus tracking force. Since no two types of cartridges weigh the same, the balance and tracking force must be adjusted for each cartridge being used.

First, to establish a point of reference, the entire arm assembly (with cartridge installed) must be balanced. If the cartridge has a removable stylus protector, remove it, (as you would to play a record). Release the tone arm from the arm rest.

To balance the arm, adjust the position of the counterweight by rotating it. A numbered stylus pressure scale plate is located immediately in front of the counterweight. Rotating the scale plate alone does not change the counterweight's position. To change the balance, grasp and turn the counterweight itself.

Adjust the weight so that the arm is level (parallel to the turntable surface) with the cartridge suspended in mid air. Then, without moving the counterweight, set the stylus pressure scale plate to indicate zero. This establishes a reference point.

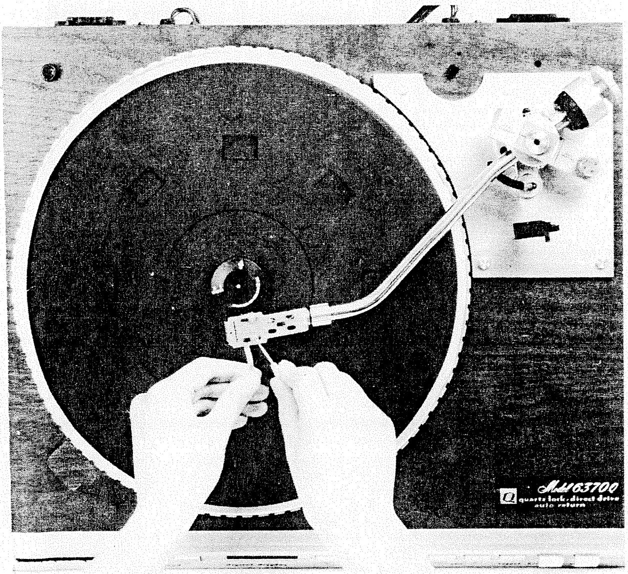


Figure 3. Stylus Overhang Adjustment

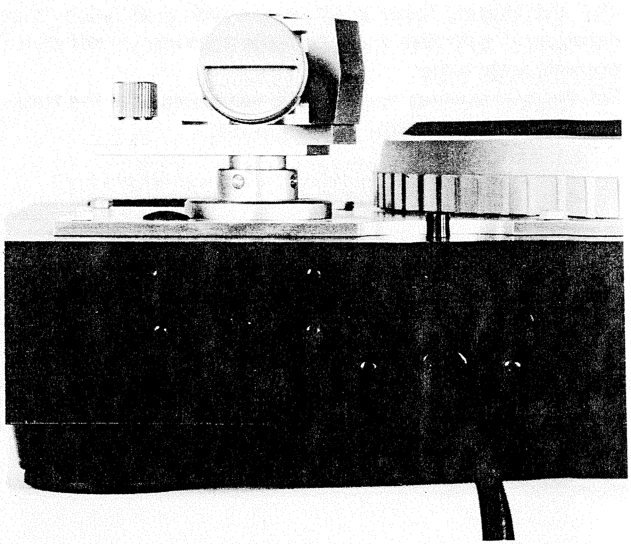


Figure 4. Lateral Balance Adjustment

3.3 LATERAL BALANCE

Set the anti-skating and tracking force controls to 0 to free the tone arm. Then, balance the tone arm until it is leveled, with the stylus cover attached. Tilt the turntable slightly and check to see if the tone arm moves inward or outward. If it moves in either direction, turn the lateral balancer as shown in Figure 5 and then tilt the turntable once again. Repeat this adjustment until the tone arm stays still.

After you have adjusted the Lateral Balance, remove the stylus cover and readjust the Vertical Tone Arm Balance. Then go ahead to the Tracking Force adjustment.

3.4 TRACKING FORCE ADJUSTMENT

For the recommended tracking force, refer to the instructions that accompany the cartridge.

Tracking force, the downward pressure of the stylus against the record, is produced by simply setting the arm off balance in the appropriate direction. That is, the counterweight is screwed inward (toward the arm pivot) until the desired downward pressure is achieved.

The stylus pressure scale plate is in frictional contact with the counterweight, so that they rotate together when the counterweight is turned. The numbers on the scale plate correspond to the tracking force measured in grams. So, if the desired tracking force is two grams, turn the counterweight inward until the stylus pressure scale plate registers 2.

3.5 ANTI-SKATING ADJUSTMENT

The anti-skating mechanism is provided to counteract the natural tendency of the arm to "skate" toward the center of the record as it is being played. The more tracking force used, the more anti-skating force required.

The anti-skating force is adjustable with graduations that correspond with the tracking force markings on the stylus pressure scale plate.
Set the anti-skating force to the same values as the tracking force. Place the arm in the arm rest.

3.6 PITCH ADJUSTMENT

The fluorescent DIGITAL DISPLAY accurately shows the speed of the platter. The platter runs at 33-1/3 rpm by setting the POWER switch to ON. For 45 rpm operation, press the SPEED 45 switch.

The pitch of playback sound varies according to the speed of the platter. The faster the speed, the higher the pitch, and vice versa.

The Model 6370Q uses the Quartz Synthesizer system that accurately controls the platter speed, permitting digital pitch control. This makes it possible to adjust the pitch while observing the indicator. The pitch is adjustable up to plus and minus 6.0% in 0.1% steps.

The indicator shows the platter speed either in "%" (percentage) or in "rpm" (revolutions per minute) according to the position of the RPM/% switch. The speed in "rpm" is indicated by 4 digits (the 4th digit is rounded). The speed in "%" is indicated by 2 digits and shows the percentage higher or lower you are from 33-1/3 rpm or 45 rpm.

The PITCH controls allow fine tuning of the platter speed. It's useful in the following instances:

1. To raise or lower the pitch of the music on the record by a half tone. Using the example given in Table 2, an "A" note on the record can be changed to an A# (A-sharp) by increasing the speed to +5.9%. The "A" note can be changed to an Ab (A-flat) by decreasing the speed to -5.6%. Similarly, to raise the pitch of a musical work by a half tone, you would increase the speed +5.9%; to lower the pitch, decrease -5.6%. This allows you to "tune" the music to match external instruments.
2. Because a change of 0.1% is imperceptible to the ear, this function allows a minor lengthening or reduction of playing time. This is especially useful for broadcasting and recording studios.

Pitch adjustment procedure:

1. Press the POWER switch. The platter will run at 33 1/3 rpm and the fluorescent indicator shows ±0.0%.
2. For 45 rpm operation, press the SPEED 45 swtich.
3. To increase the pitch, press the "+" button. The platter speed is increased at a rate determined by the amount of time the button is held down. It changes 5 steps (at 0.1% per step) for the first 2 seconds and then 5 steps per second until it reaches +6% variation. Similarly, to decrease the platter speed, depress the "–" button. The platter will decrease speed at the same rate as above.
4. To cancel any speed variation programmed into the 6370Q, press the SPEED switch. The platter will immediately change speed to the original 33-1/3 or 45 rpm.

4. SERVICE NOTES

4.1 How to Use the Connector for P101 P.W. Board

1. To disconnect the connector from the P101 P.W. board, proceed as follows:
   Depressing the projection on the connector until a click is heard, pull out the connector. In this case, be sure not to pull the leads but the connector, otherwise leads may be broken. And if the connector is pulled without depressing the projection, the latter may be broken and the pins off the circuit board.
2. When connecting the connector to the board, be sure to set the connector fully into the pins on the P.W. board. This can be recognized by a click sound.

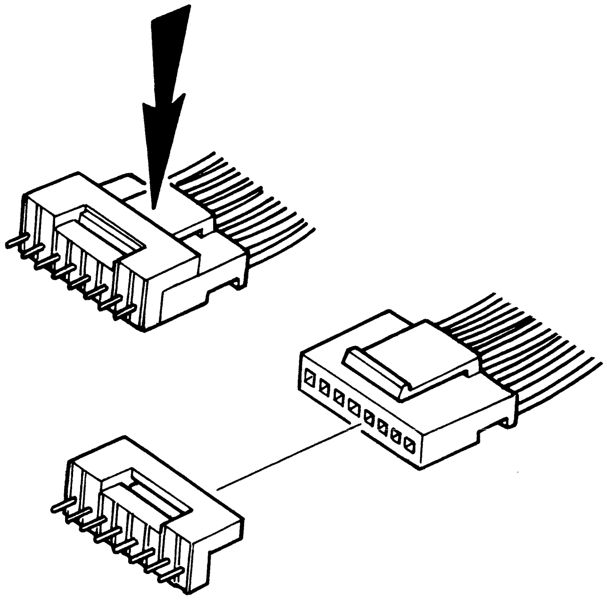


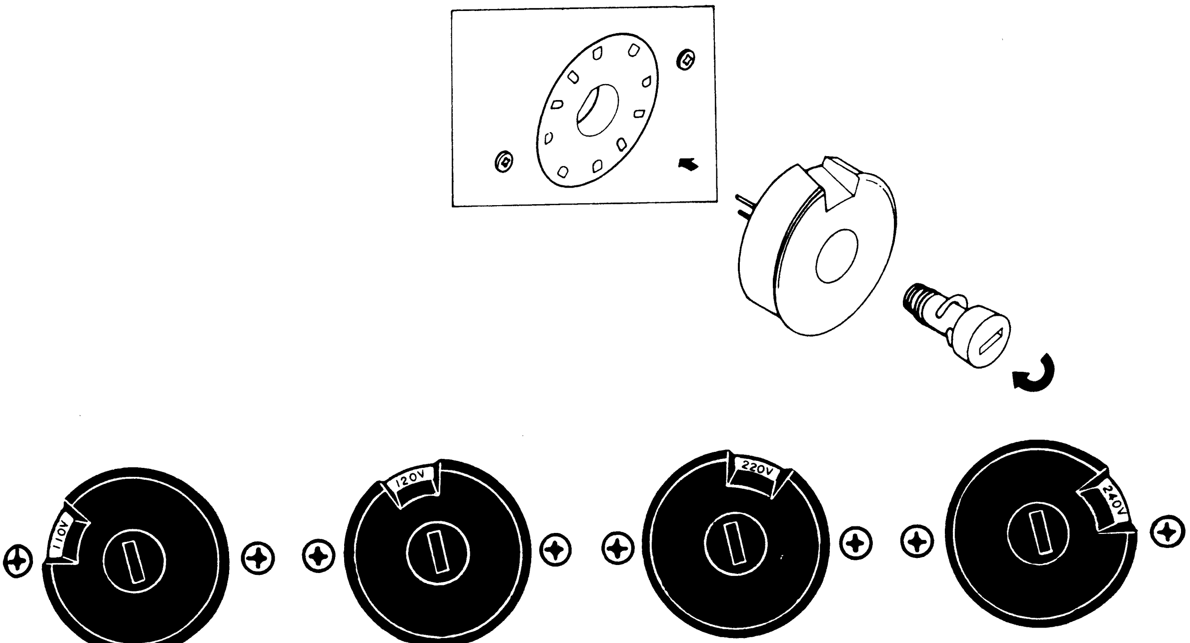
Figure 5. Usage of Connector

4.2 Voltage Conversion for European Model

The European version of the Model 6370Q is equipped with a universal power transformer that may be adjusted to operate at 110V, 120V, 220V or 240V AC 50 to 60 Hz. To convert the unit to a different power source voltage, reposition conversion plug as shown in the illustration below.

CAUTION

DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.



For 110V Operation

For 120V Operation

For 220V Operation

For 240V Operation

Figure 6. Voltage Conversion Chart

4.3 Cartridge Wire Color Code

Before a cartridge is screwed into the shell, the small clips at the ends of the wires in the cartridge shell should be pushed onto their corresponding cartridge connection pins.

The wires are color coded as follows:
RIGHT CHANNEL HOT . . . . RED
RIGHT CHANNEL GROUND . . . . GREEN
LEFT CHANNEL HOT . . . . WHITE
LEFT CHANNEL GROUND . . . . BLUE

The cartridge or its accompanying technical sheet will identify the cartridge connection pins. It may be necessary to slightly compress the terminal clips with your fingers to make them fit snugly on the prongs of some cartridges.

After the wires are connected, insert the mounting screws through the supplied plastic washers, through the top of the cartridge shell, and through the mounting tabs on the cartridge itself. Then, attach the two nuts, just tight enough to hold the cartridge (it is likely they will have to be loosened again to adjust the placement of the cartridge in the shell).

Tuck the lead wires neatly behind the cartridge. Next, attach the cartridge shell to the tone arm: Plug it into the receptacle on the arm, push inward to compress the four connector pins inside, and twist the sleeve to tighten.

5. TURNTABLE CIRCUIT DESCRIPTIONS AND REPAIR

5.1 Outline of Phono-motor

20-pole, 30-slot direct drive motor.
FG signal: 100Hz at 33rpm.
Three-phase driven.

Ratings	Design Cent.	Limit
* Rumble NAB	70	60
* Wow & flutter NAB	0.02	0.05
* Starting torque	not less than 1300g.cm	
* Rated load current	70mA at 10g.cm	
* Rated voltage	25 volts	

5.2 Phono-motor Drive & Control Circuits

1. Drive & FG circuits

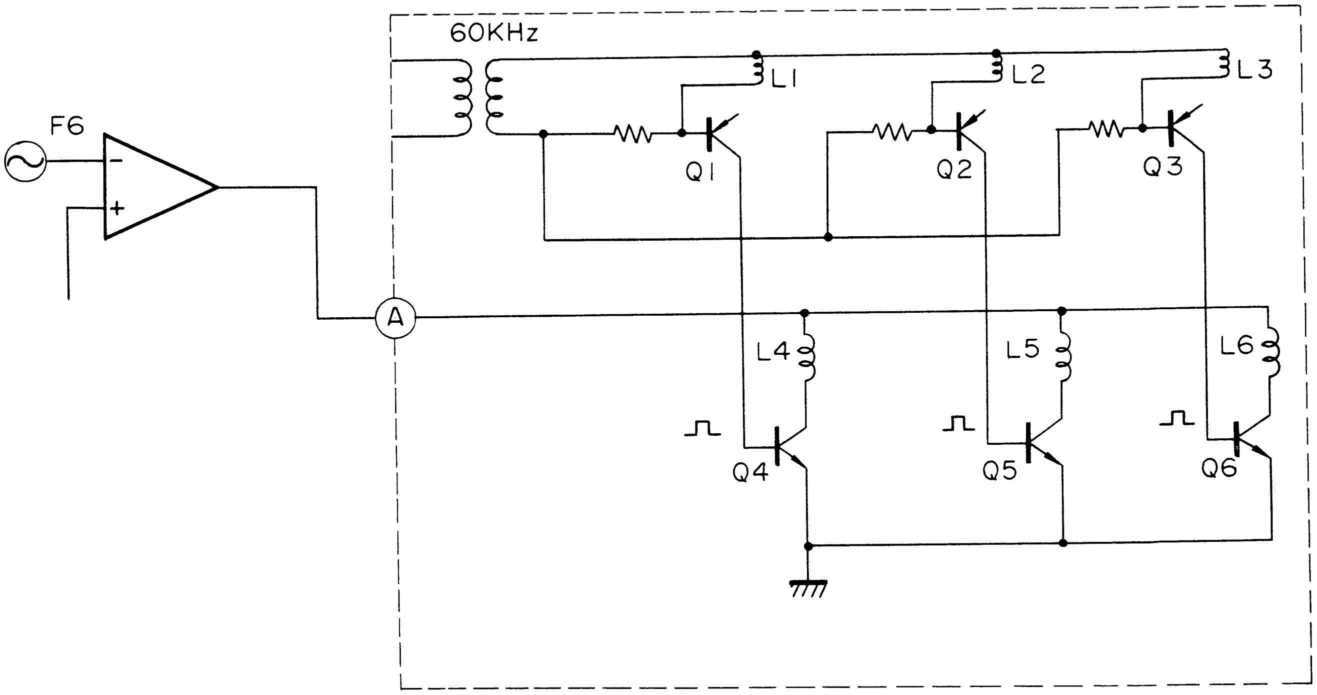
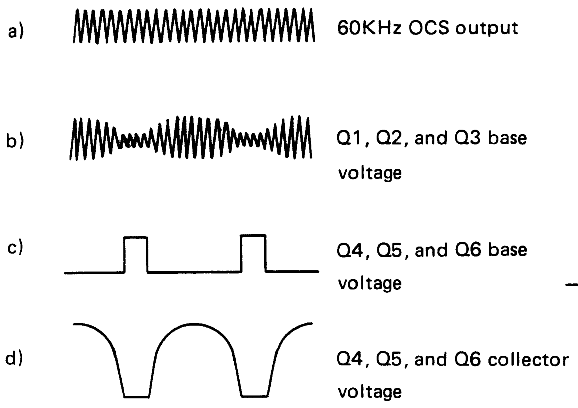


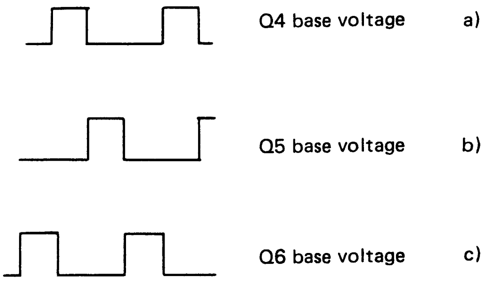
Figure 1.

Figure 1 shows a theoretical illustration for the phono-motor drive circuit. The bias oscillator output of 60 KHz is switched by the pulses generated from speed-sensor coils L1, L2, and L3. Since these coils are mounted on the phono-motor at a relative angle of 120° apart from each other, the phases of the switching pulses generated by switching transistors Q1, Q2, and Q3 are also separated from each other by 120°. The outputs of Q1, Q2, and Q3 thus sequentially turn on drive transistors Q4, Q5, and Q6 respectively which supply drive currents to drive coils L4, L5, and L6.

The drive current passing through drive transistors Q4, Q5, and Q6 depends on the FG amplifier output voltage.

As the FG signal frequency generated from the phono-motor increases, in other words, as the platter turning speed increases, the FG amplifier output decreases. This causes the potential at point "A" in the figure to be lowered, reducing the drive current through Q4, Q5, and Q6. As a result, the platter turning speed is controlled and decreased until normal turning speed is achieved.


a)
60KHz OCS output
b)
Q1, Q2, and Q3 base voltage
c)
Q4, Q5, and Q6 base voltage
d)
Q4, Q5, and Q6 collector voltage


Q4 base voltage
a)
Q5 base voltage
b)
Q6 base voltage
c)

Figures 2 and 3 illustrate drive circuit voltage waveforms.

Figure 2.

Figure 3.

2. Quartz circuit operation

This paragraph gives brief descriptions of quartz circuit operation. For further details, refer to the description for the Model M6350Q Turntable.

If in other respects the phono-motor drive circuit is assumed to be the same, the only difference is just how to supply the drive voltage to point "A" in Fig. 1. In other words, the difference is whether the FG signal is compared with a frequency generated by an LC oscillator or a quartz crystal oscillator. A theoretical block diagram is shown in Figure 4. The FG signal is first amplified by Q7, then converted into a square wave by Q8. Meanwhile, the crystal OSC output is frequency divided by divider F.D., then coupled to phase detector P.D. where its phase is compared with the FG signal phase. The P.D. output is integrated by R and C before amplification and coupled to point "A".

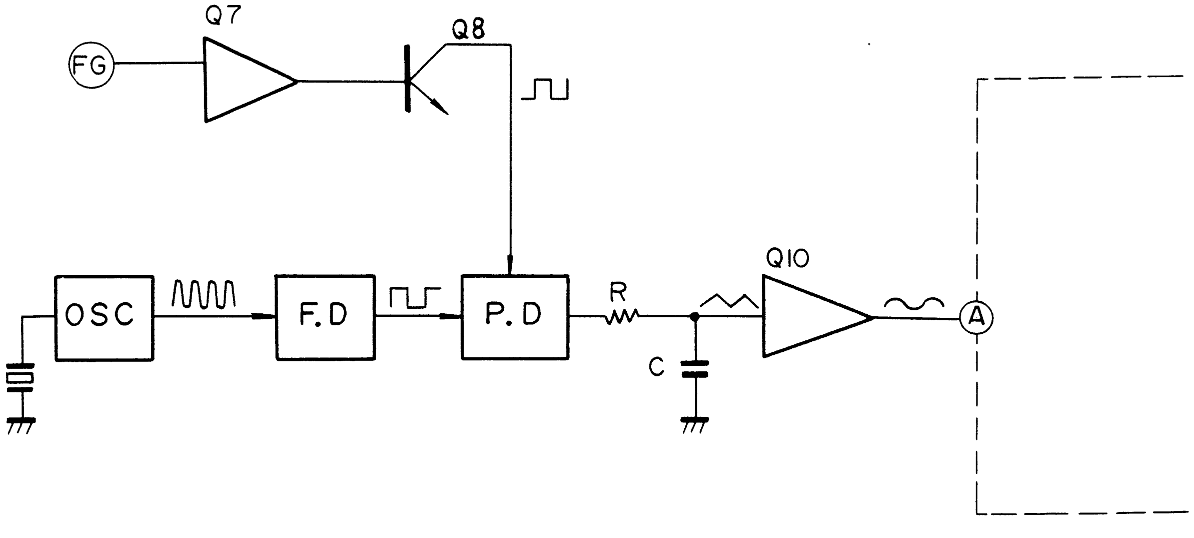

Q7
Q8
FG
OSC
F.D
P.D
R
C
Q10
A

Figure 4.

3. 0.1%-stepped speed control by using the quartz operation:

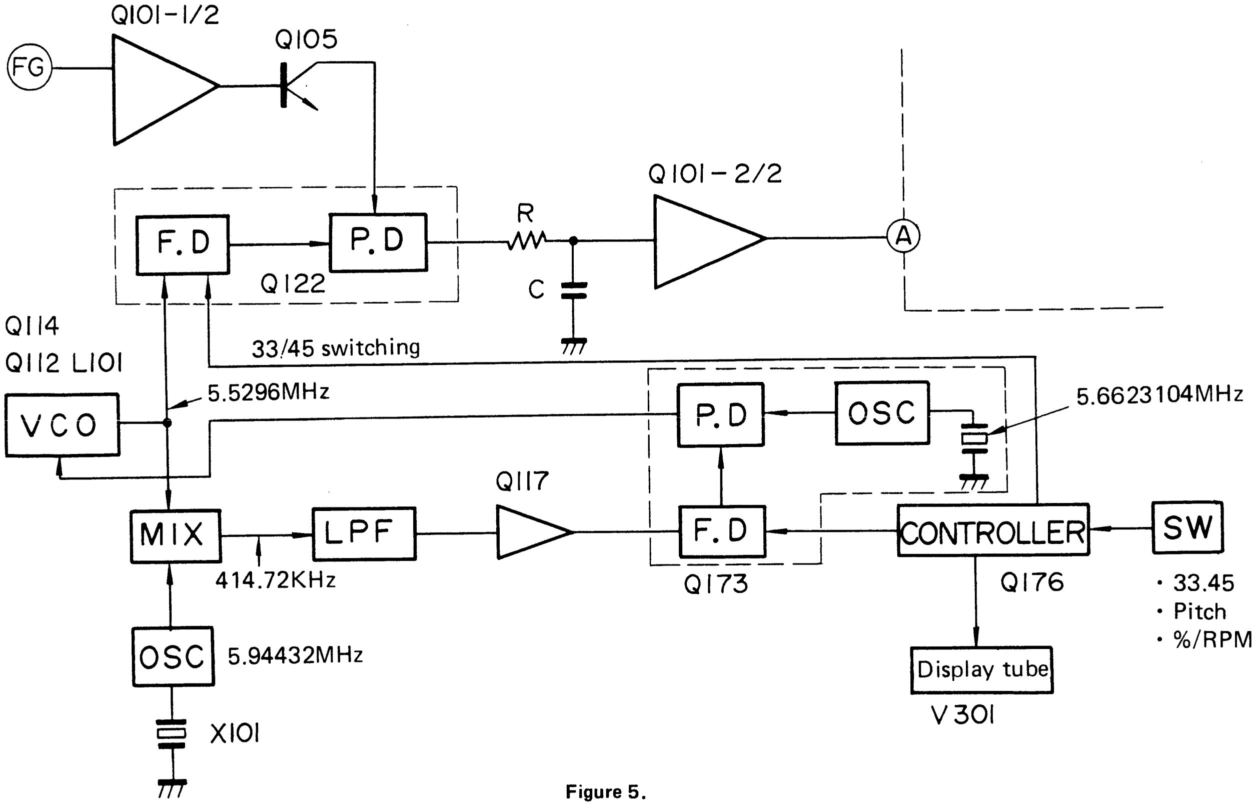


Figure 5.

Figure 5 is a block diagram of the drive and control circuits in the M6370Q turntable. The M6370Q is equipped with a PLL circuit which enables 0.1%-stepped pitch control. The 5.94432MHz signal generated by X101 is mixed in Q115 with the 5.5296MHz signal generated by the VCO. The resultant difference frequency, 414.72KHz, passes through a π-type filter comprised of C127, C128, and L102. This low-pass filter has a cutoff frequency of approx. 1.3MHz. The difference signal, after passing through the filter, is amplified by Q117, then passed to P.D. INPUT terminal 13 of Q122. Based on the command from the controller, the signal is divided by N (N=60 ± 15) before passing to the P.D. The 5.6623104MHz signal generated by X102 is divided by 1024 (10 bits), then fed to the P.D. together with the 5.5296KHz signal applied to terminal 13 on the P.D. The output of the P.D. is integrated before passing to the anode of varicap diode Q114 (SVC303) so as to control the VCO frequency. The VCO output of 5.5296MHz is frequency divided by the F.D. (Q122), then coupled to the P.D. where it is compared with the FG signal of 100Hz at 33rpm. The P.D. output is then amplified before passing to point "A" in the motor drive circuit.

The display tube can display, in accordance with a command from the controller, a turning speed which is different from the actual turning speed. In order to avoid confusion, the display tube blinks when the phono-motor is not locked to the locking frequency generated by phase detector Q122. The blinking frequency is controlled by an internal IC, and is not controllable externally.

The signal generated by operating the momentary switch generates TTL-level signals corresponding to each dividing ratio on pins 1 through 8 of Q173. The signal applied to pin 13 is compared with the signal from 82.944KHz to 746.496KHz with a center frequency of 414.72KHz, and locked at 0.1% divisions of that frequency.

The program dividers Q122 and Q173, (PD861) are listed in the following table:

Coefficient	1	2	4	8	16	32	64	128
Pins	1	2	3	4	5	6	7	8

Therefore, when the turning speed is 33rpm + 0.0% pins 1, 2, 4, and 7 are set to +5V since N=75. Where 1+2+8+64=75.

When the pitch control is set to the +0.1% position, N becomes 76, and +5V is applied to pins 3, 4, and 7. 4+8+64=76.

Meanwhile, pin 13 accepts a signal which varies its frequency by 5.5296Hz per 0.1% of pitch variation. When N is 76, a signal 414.72 + 5.5296 = 420.2496KHz is fed out from the mixer. The 0.1%-stepped pitch control is thus accomplished.

4. Phono-motor drive circuit

Figure 6 shows an electronic brake circuit for the M6370Q turntable platter.

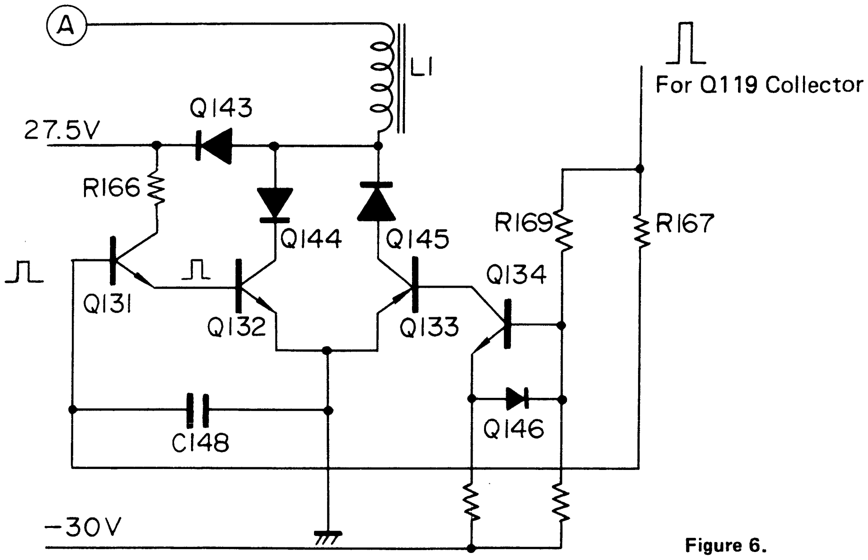


Figure 6.

During normal rotation, Q131 and Q132 are turned ON via the switch circuit so as to pass the current from point "A" through L1. When the potential at point 'A" goes negative, Q131 and Q132 are turned OFF, while Q134 and Q133 are turned ON via R169. This causes a reverse current to pass through L1 and stops the motor rotation. The potential at point "A" goes negative only when the speed selector is switched from 45rpm into 33rpm, and when the tonearm is returned to the arm rest in the AUTO mode. When −5V is generated on pin-25 of Q176, making pin-6 of Q101 negative, point "A" also goes negative.

3. Relay Circuit

When the power switch on the turntable is set to the ON position in the manual mode, the relay turns ON, bringing the turntable into the normal rotation mode. The relay also controls the motor drive power (at point "A") to prevent reverse rotation of the motor or to stop the motor when the tonearm is on the arm rest in the AUTO mode.

* Relay operation:

1. Immediately after the power switch is turned ON, the motor still remains in the stop state, and the start/stop detector Q103 is in the stop mode. Therefore, the collector of Q103 and pin-24 of Q176 are both set to +5V, causing relay drive transistor Q162 to turn ON to energize the relay.
2. When the platter starts turning, Q103's collector goes to 0V, while pin-24 of Q176 remains at +5V. This holds Q162 in the ON state and hence the relay also in the ON state.
3. If the platter is forced to reversely rotate, the order of pulses applied to pins 1 and 5 of reverse rotation detector Q110 is reversed. This brings pin-11 of the circuit comprised of three NAND circuit to 0V. Therefore, the base voltage of Q162 is reduced to 1.0V, turning the relay OFF.
4. In the MANUAL mode, the phono-motor always rotates since switch S006 for AUTO/MANUAL control is turned ON.

In the AUTO mode, the motor rotation is controlled by rest switch S005 which is connected in parallel with S006.

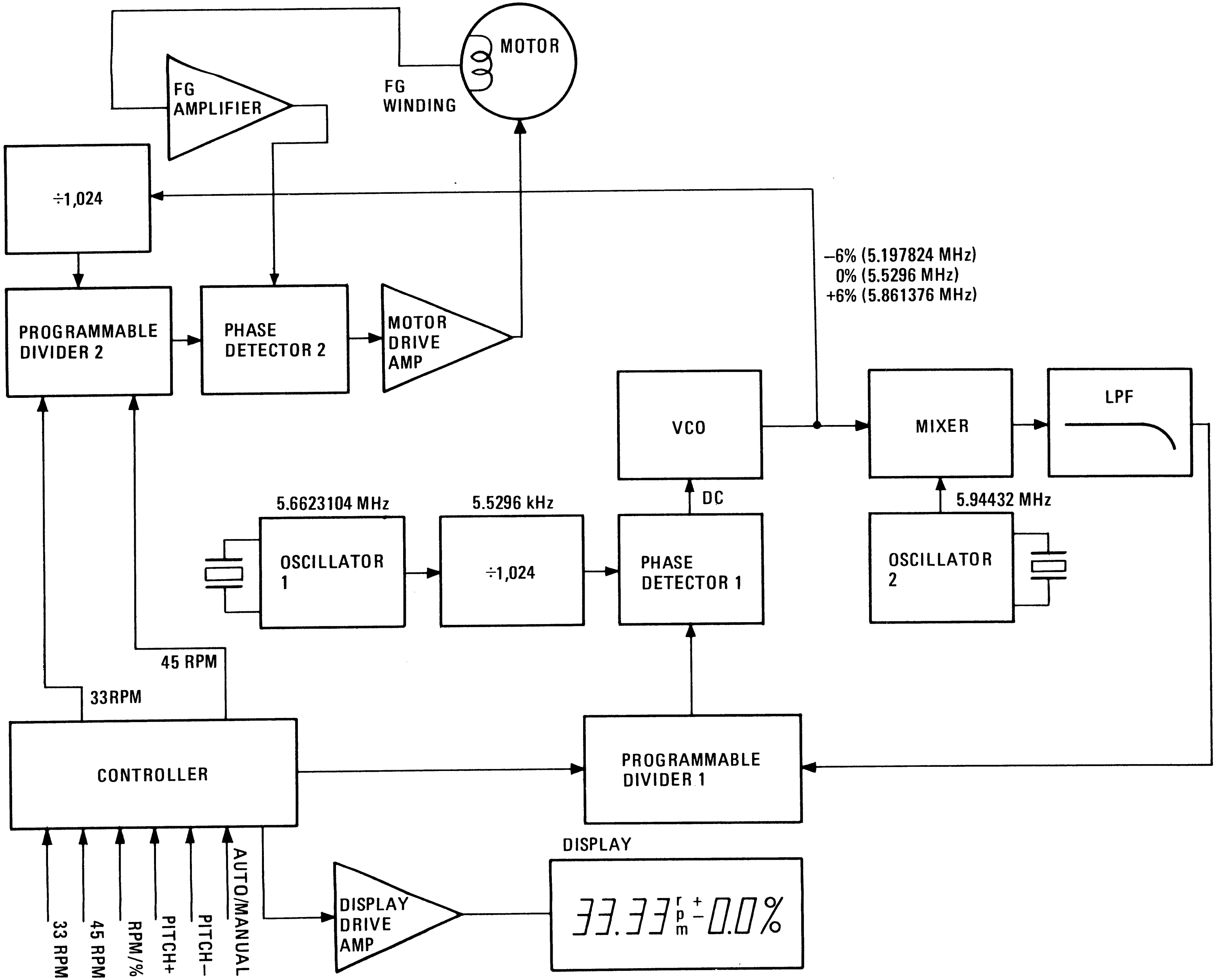
Rest switch S005 is controlled by a lever provided on the arm-pivot shaft. When the tonearm is placed on the arm rest, the switch is turned OFF, and when the tonearm is brought over the disc, it is turned ON to start phono-motor rotation.

When the tonearm is on the arm rest in the AUTO mode, the motor remains in the STOP mode. Therefore, start/stop detecting transistor Q103 is set in the OFF state, and hence the relay is also set to the OFF state.

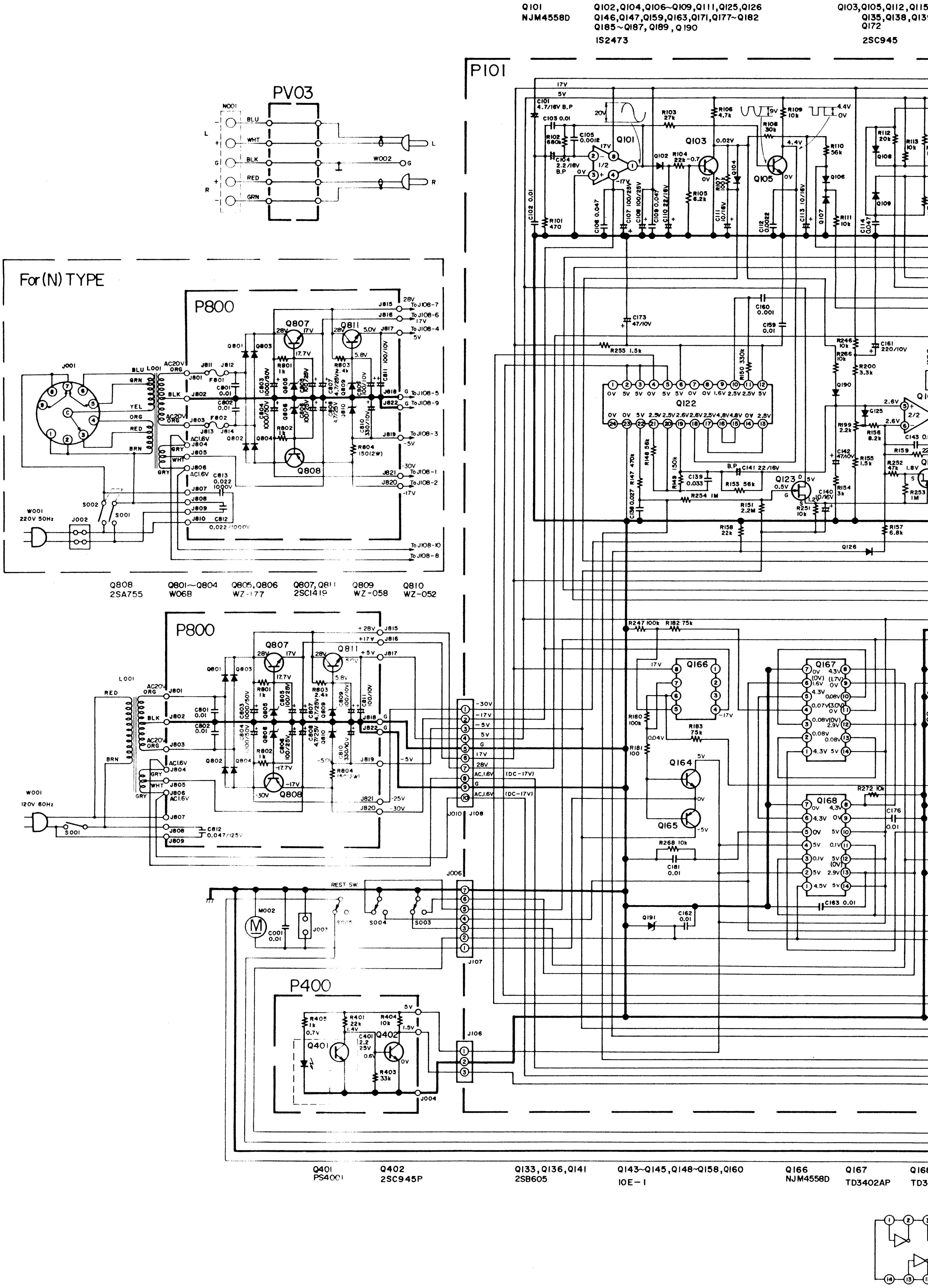
Relay operating voltage distribution

	Q103 collector	Q176 24	Q110 11	Q162 base	Relay
Immediately after the power switch is turned ON.	5V	0	5V	1.5V	ON
Normal rotation	0	5V	5V	1.5V	ON
Reverse rotation	0	5V	0	1.0V	OFF

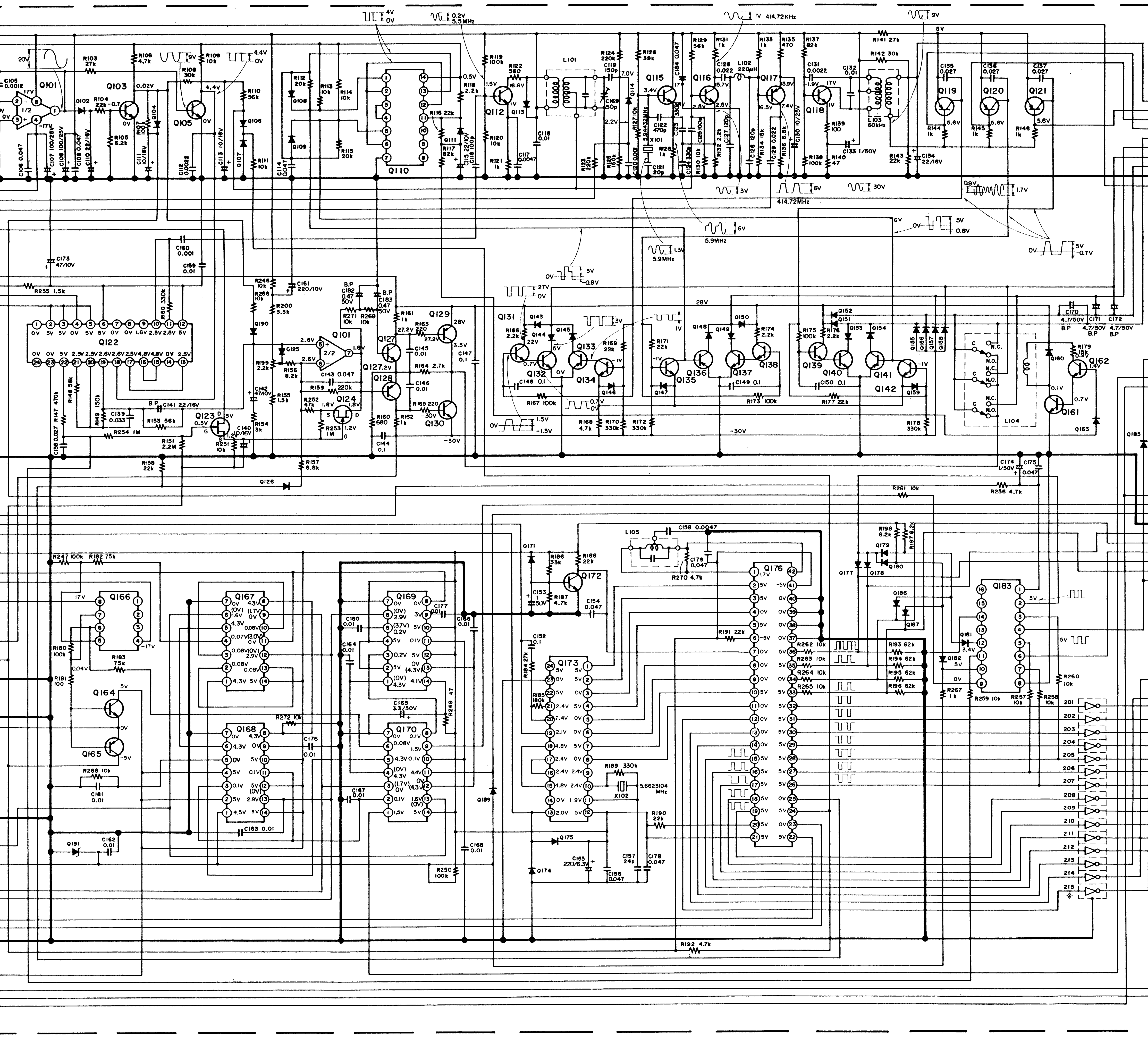
6. BLOCK DIAGRAM


MOTOR
FG WINDING
FG AMPLIFIER
÷1,024
PROGRAMMABLE DIVIDER 2
PHASE DETECTOR 2
MOTOR DRIVE AMP
−6% (5.197824 MHz)
0% (5.5296 MHz)
+6% (5.861376 MHz)
VCO
MIXER
LPF
DC
5.94432 MHz
5.6623104 MHz
5.5296 kHz
OSCILLATOR 1
÷1,024
PHASE DETECTOR 1
OSCILLATOR 2
45 RPM
33RPM
CONTROLLER
PROGRAMMABLE DIVIDER 1
DISPLAY
33 RPM
45 RPM
RPM/%
PITCH+
PITCH−
AUTO/MANUAL
DISPLAY DRIVE AMP
33.33 rpm ±0.0%

7. SCHEMATIC DIAGRAM

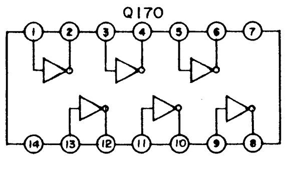

Q101
NJM4558D
Q102,Q104,Q106~Q109,Q111,Q125,Q126
Q146,Q147,Q159,Q163,Q171,Q177~Q182
Q185~Q187,Q189,Q190
1S2473
Q103,Q105,Q112,Q11
Q135,Q138,Q13
Q172
2SC945
P101
PV03
N001
BLU
WHT
BLK
RED
GRN
W002
L
R
G
For (N) TYPE
P800
J001
L001
AC20V
ORG
J811
J812
F801
F802
J801
J802
J803
J813
J814
C801 0.01
C802 0.01
Q801
Q802
Q803
Q804
Q807
Q811
Q808
28V
17V
5.0V
17.7V
5.8V
R801 1k
R802 1k
R803 4k
R804 150(2W)
C803 1000/50V
C804 1000/50V
C811 100/10V
C810 330/10V
J815
J816
J817
J818
J819
J821
J820
J822
To J108-7
To J108-6
To J108-4
To J108-5
To J108-9
To J108-3
To J108-1
To J108-2
To J108-10
To J108-8
-5V
-30V
-17V
AC1.6V
J804
J805
J806
J807
J808
J809
J810
C812 0.022/1000V
C813 0.022 1000V
S001
S002
J002
W001
220V 50Hz
Q808
2SA755
Q801~Q804
W06B
Q805,Q806
WZ-177
Q807,Q811
2SC1419
Q809
WZ-058
Q810
WZ-052
+28V
+17V
+5V
-17.7V
-25V
-30V
C812 0.047/125V
120V 60Hz
J010
J108
(DC-17V)
REST SW
M002
C001 0.01
J007
S005
S004
S003
J006
J107
P400
R405 1k
R401 22k
R404 10k
C401 2.2 25V
R403 33k
Q401
Q402
0.7V
1.4V
1.5V
0.6V
0V
J004
J106
Q401
PS4001
Q402
2SC945P
Q133,Q136,Q141
2SB605
Q143~Q145,Q148~Q158,Q160
10E-1
Q166
NJM4558D
Q167
TD3402AP
C101 4.7/16V B.P
C103 0.01
R102 680k
C104 2.2/16V B.P
C105 0.0012
R103 27k
R104 22k
R105 6.2k
R106 4.7k
R108 30k
R109 10k
R110 56k
R111 10k
R101 470
C102 0.01
C106 0.047
C107 100/25V
C108 100/25V
C109 0.047
C110 22/16V
C111 10/16V
C112 0.0022
C113 10/16V
C114 0.047
Q101
Q103
Q105
1/2
20V
4.4V
0.02V
R112 20k
R113 10k
C173 47/10V
C160 0.001
C159 0.01
R255 1.5k
R150 330k
R246 10k
R266 10k
R200 3.3k
C161 220/10V
Q122
0V 5V 5V 0V 5V 5V 0V 0V 1.6V 2.5V 2.5V 5V
0V 0V 5V 2.5V 2.5V 2.6V 2.6V 2.5V 4.8V 4.8V 0V 2.5V
R147 470k
R148 56k
R149 150k
C139 0.033
C141 22/16V
R153 56k
R254 1M
R151 2.2M
R158 22k
C138 0.027
Q123
R251 10k
C140 10/16V
R154 3k
R157 6.8k
Q126
Q190
Q125
R199 2.2k
R156 8.2k
C142 47/10V
R155 1.5k
C143
R159
R252 47k
R253 1M
2/2
2.6V
1.8V
R247 100k
R182 75k
Q166
R180 100k
R183 75k
R181 100
0.04V
Q164
Q165
R268 10k
C181 0.01
Q167
Q168
R272 10k
C176 0.01
C163 0.01
Q191
C162 0.01

Q102,Q104,Q106~Q109,Q111,Q125,Q126 Q146,Q147,Q159,Q163,Q171,Q177~Q182 Q185~Q187,Q189,Q190	1S2473
Q103,Q105,Q112,Q115,Q116,Q118,Q131,Q134 Q135,Q138,Q139,Q142,Q161,Q162,Q164 Q172	2SC945
Q110	SN7400
Q113	1N60
Q114	SVC303
Q117,Q119~Q121 Q165	2SA733
Q122	μPD861C
Q123,Q124	2SK30Y
Q127	2SC1318
Q128	2SA720
Q129	2SB596
Q130	2SD526
Q132,Q137,Q140	2SD571

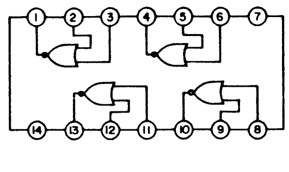

Q101
Q103
Q105
Q110
Q112
L101
Q115
Q116
Q117
Q118
Q119
Q120
Q121
Q122
Q123
Q124
Q127
Q128
Q129
Q130
Q131
Q132
Q133
Q134
Q135
Q136
Q137
Q138
Q139
Q140
Q141
Q142
Q160
Q161
Q162
L104
L105
Q164
Q165
Q166
Q167
Q168
Q169
Q170
Q172
Q173
Q176
Q183
X101
X102
5.6623104 MHz
414.72KHz
414.72MHz
5.9MHz
5.5MHz
60kHz
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215

141	
Q143~Q145,Q148~Q158,Q160	10E-1
Q166	NJM4558D
Q167	TD3402AP
Q168,Q169	TD3474AP
Q170	SN7404 Or TD3404AP
Q174,Q175	1N60
Q176	μPD547C
Q173	μPD861C
Q183	μPD4049C
Q191	WZ-052

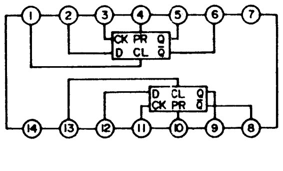
Q170


1
2
3
4
5
6
7
14
13
12
11
10
9
8

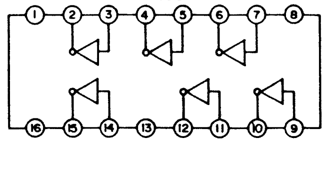
Q167

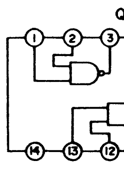

1
2
3
4
5
6
7
14
13
12
11
10
9
8

Q168, Q169


1
2
3
4
5
6
7
CK PR Q
D CL Q
D CL Q
CK PR Q
14
13
12
11
10
9
8

Q183

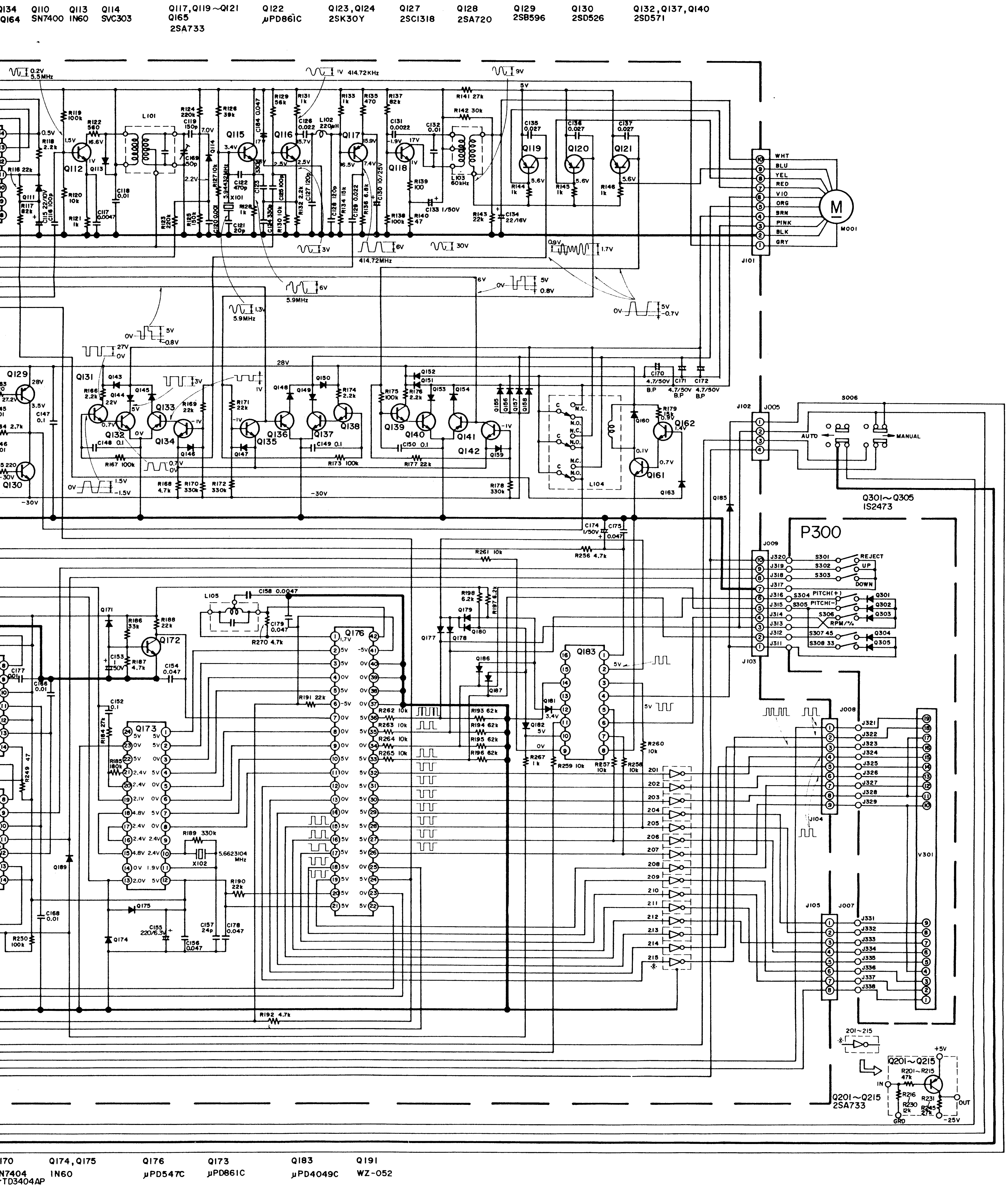

1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9

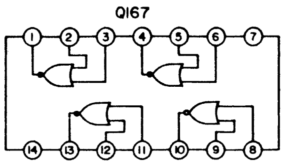


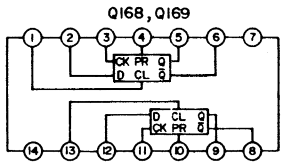
Note: Measure condi

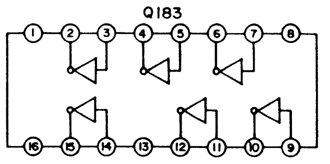
Revolution; 33

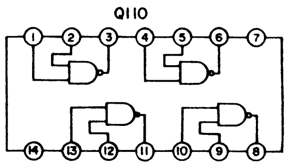
Tone Arm; Do

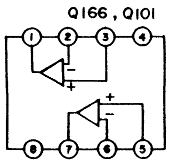

Q134 Q164
Q110 SN7400
Q113 IN60
Q114 SVC303
Q117,Q119~Q121 Q165 2SA733
Q122 µPD861C
Q123,Q124 2SK30Y
Q127 2SC1318
Q128 2SA720
Q129 2SB596
Q130 2SD526
Q132,Q137,Q140 2SD571
M
M001
J101
WHT
BLU
YEL
RED
VIO
ORG
BRN
PINK
BLK
GRY
414.72KHz
414.72MHz
5.9MHz
5.5MHz
J102
J005
S006
AUTO
MANUAL
Q301~Q305 1S2473
P300
J009
S301 REJECT
S302 UP
S303 DOWN
S304 PITCH(+)
S305 PITCH(−)
S306 RPM/%
S307 45
S308 33
J103
J008
J104
V301
J105
J007
Q176
Q173
Q183
Q172
X101
X102 5.6623104 MHz
L101
L102
L103
L104
L105
201~215
Q201~Q215
R201~R215 47k
Q201~Q215 2SA733
IN
OUT
GRD
+5V
−25V
Q170 SN7404 TD3404AP
Q174,Q175 IN60
Q176 µPD547C
Q173 µPD861C
Q183 µPD4049C
Q191 WZ-052


Q167


Q168,Q169


Q183

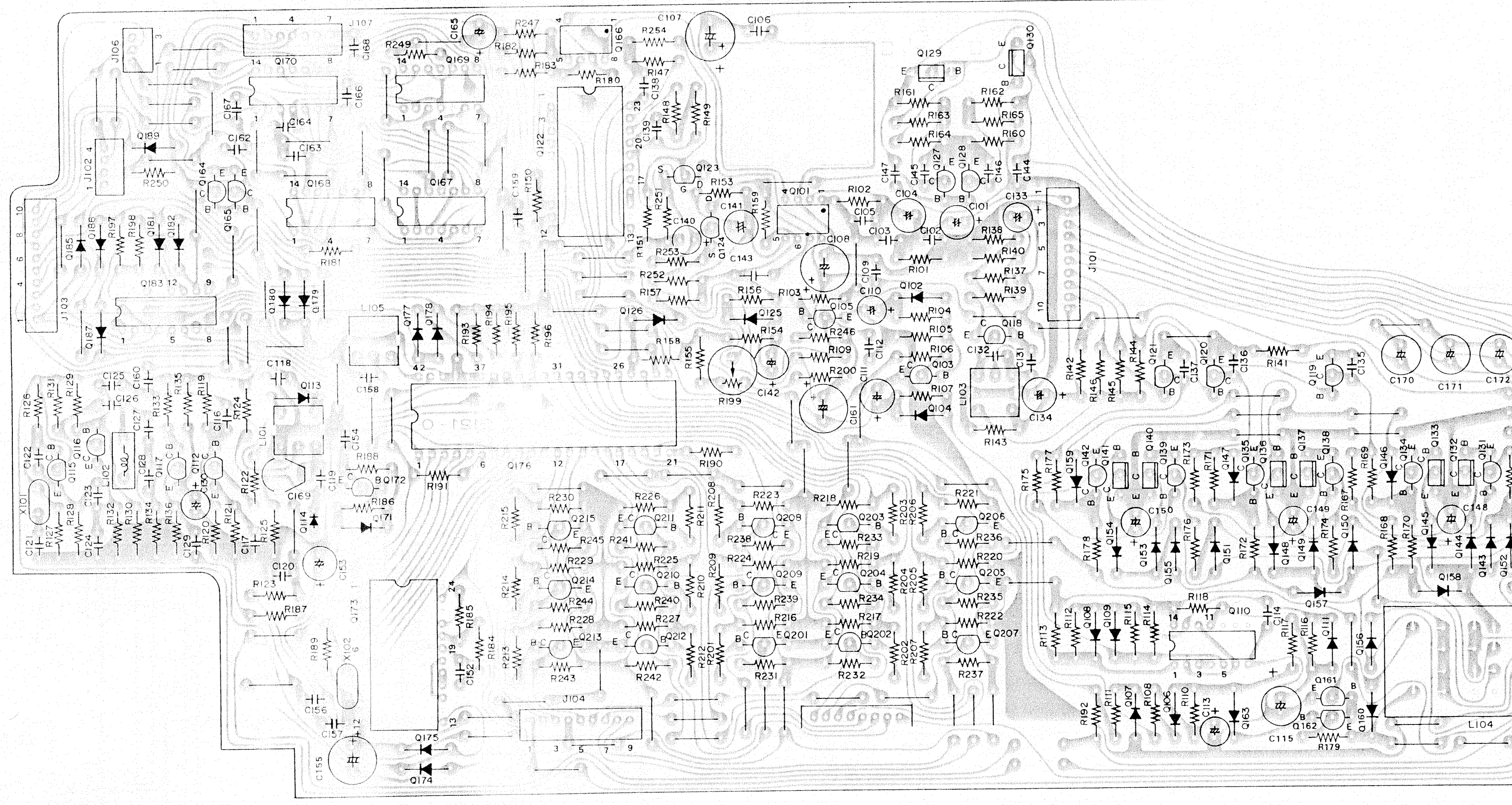

Q110


Q166 , Q101

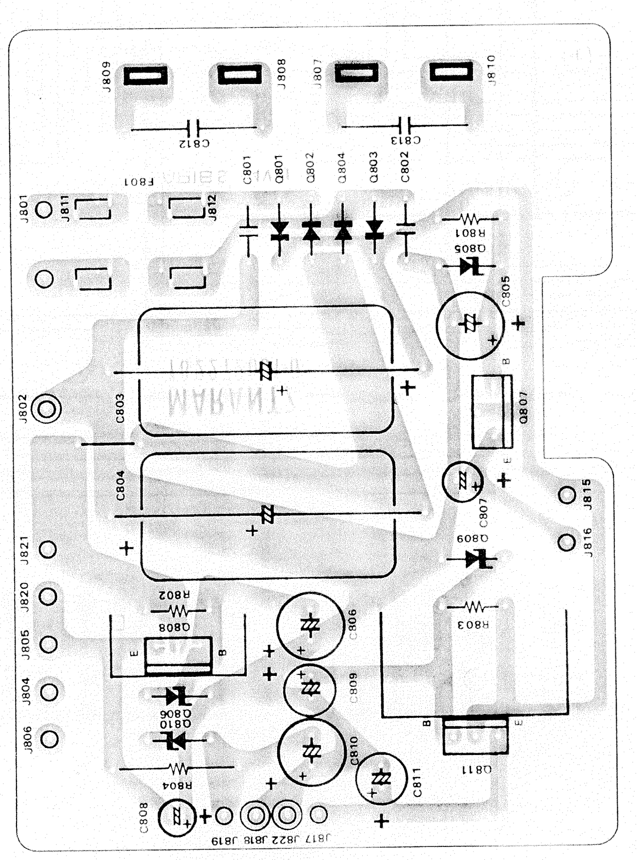
Note: Measure conditions of each voltage and wave form are as follows.
Revolution; 33 rpm ± 0.00%
Tone Arm; Down (Up) Position

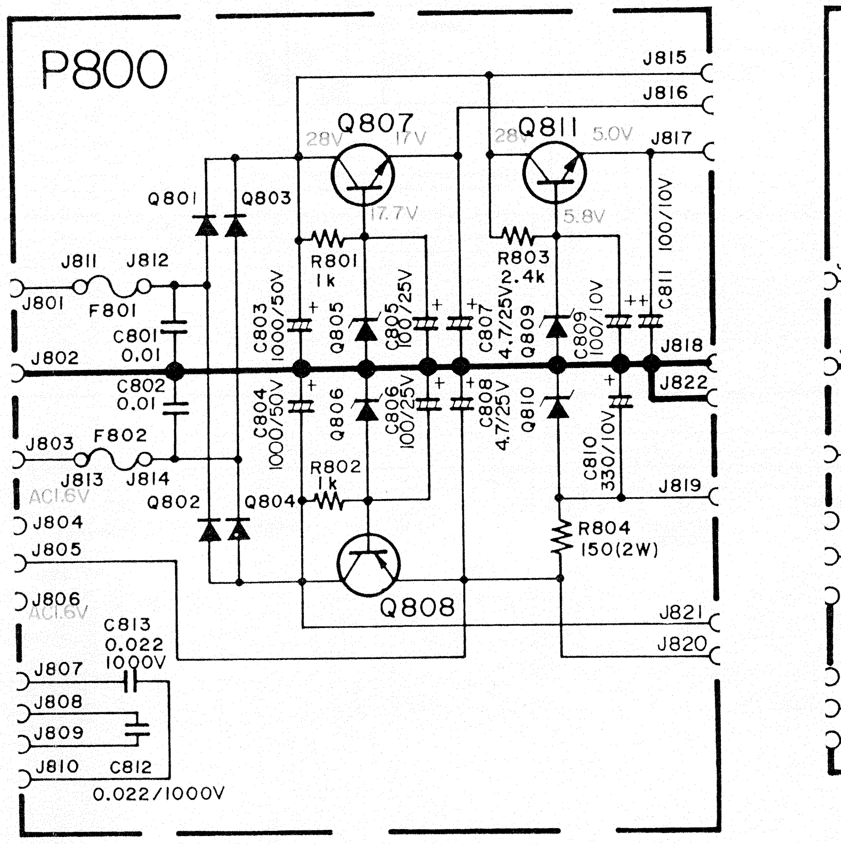
8. DIAGRAM AND COMPONENT LOCATION

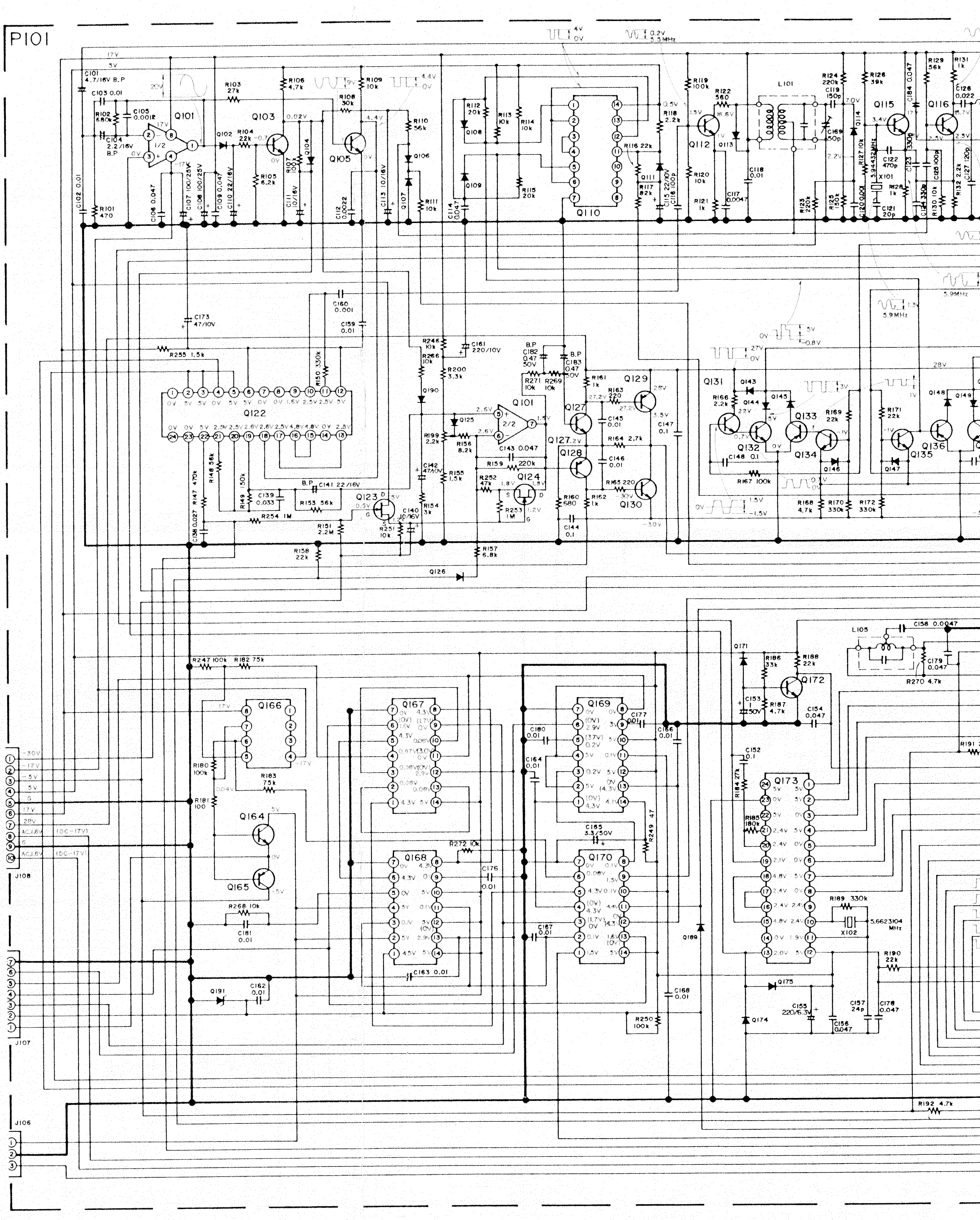
8.1 Control Circuit Assembly (P101) Schematic Diagram and Component Locations

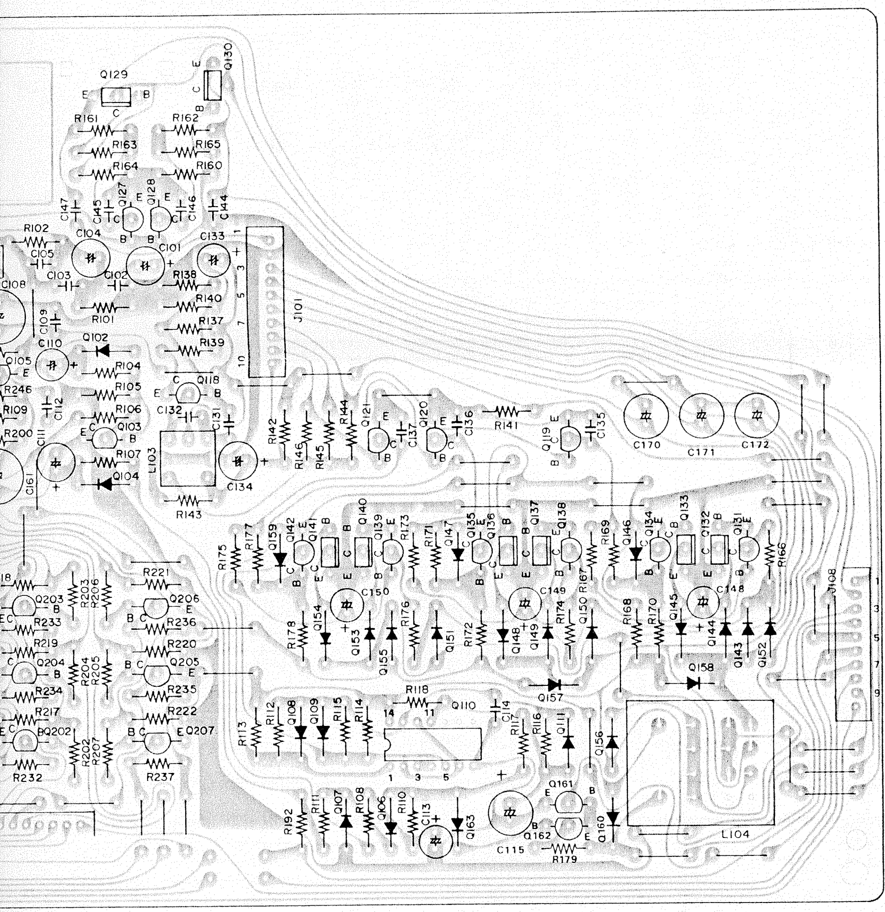


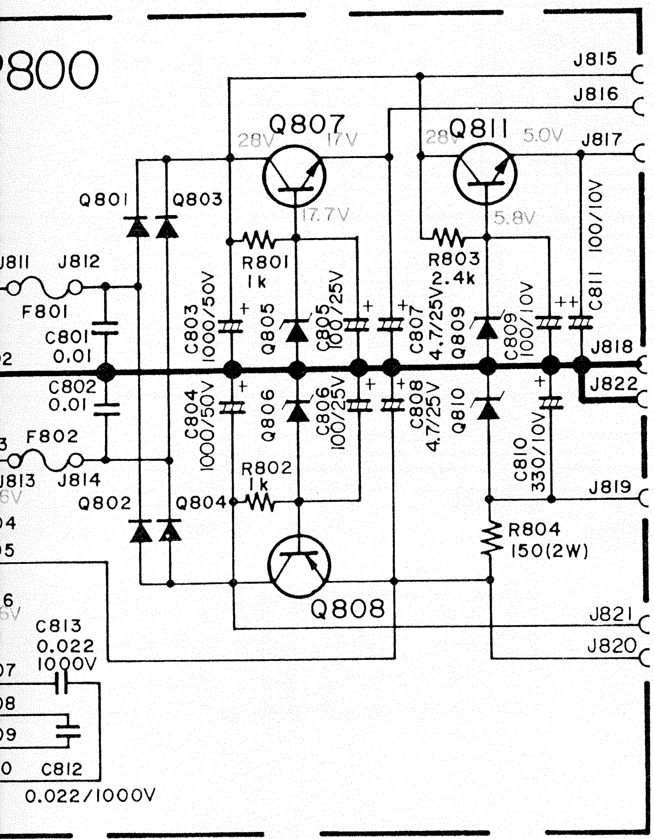
8.4 Power Supply Assembly (P800) Schematic Diagram and Component Locations

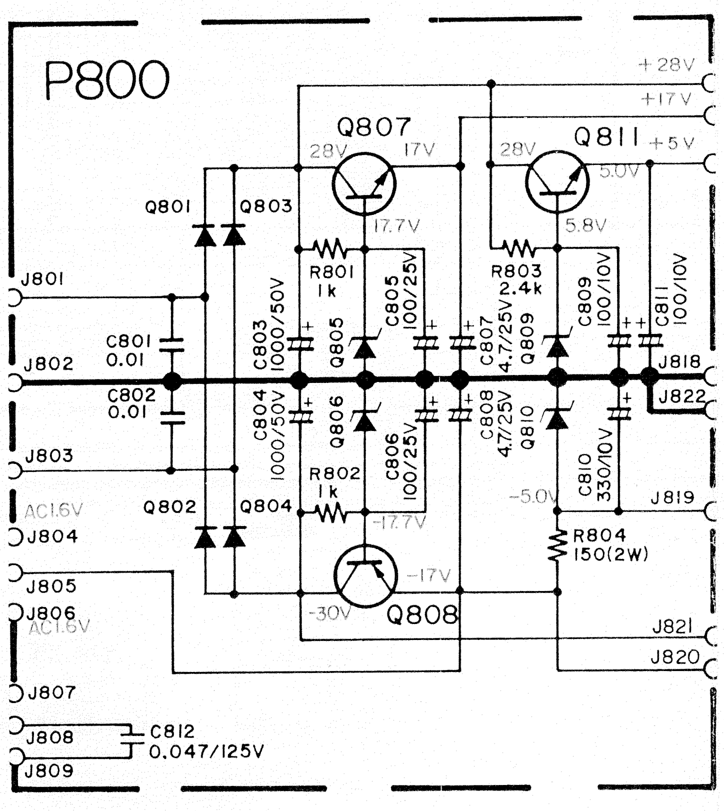



P800
J815
J816
J817
Q807
Q811
28V
17V
5.0V
17.7V
5.8V
Q801
Q803
R801
1k
R803
2.4k
J811
J812
J801
F801
C801
0.01
J802
C802
0.01
C803
1000/50V
C804
1000/50V
Q805
Q806
C805
100/25V
C806
100/25V
C807
4.7/25V
C808
4.7/25V
Q809
Q810
C809
100/10V
C810
330/10V
C811
100/10V
J818
J822
J819
J803
F802
J813
J814
AC16V
Q802
Q804
R802
1k
R804
150(2W)
J804
J805
J806
AC16V
Q808
C813
0.022
1000V
J821
J820
J807
J808
J809
J810
C812
0.022/1000V

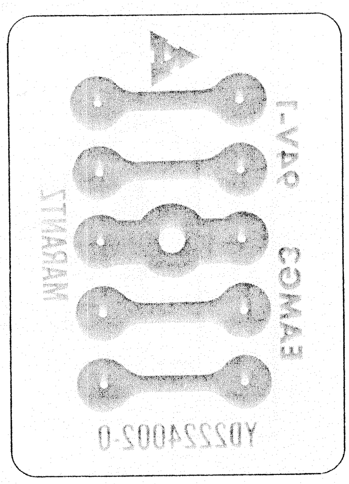

P101
Q101
Q103
Q105
Q110
Q112
Q115
Q116
Q122
Q123
Q124
Q127
Q128
Q129
Q130
Q131
Q132
Q133
Q134
Q135
Q136
Q164
Q165
Q166
Q167
Q168
Q169
Q170
Q172
Q173
L101
L105
X101
X102
J105
J106
J107
J108

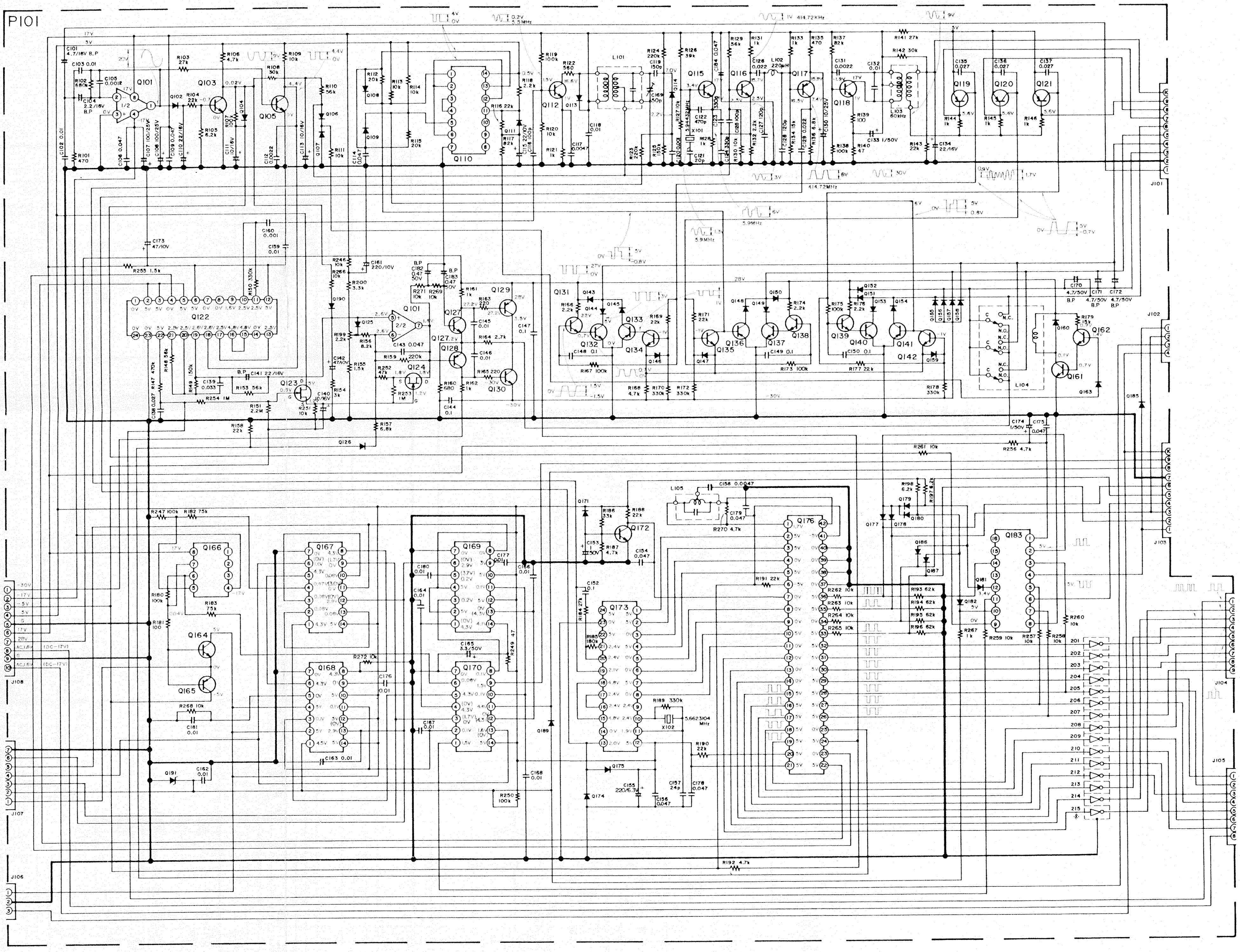

Q129
Q130
J101
J102
L104
C170
C171
C172
C134
C115

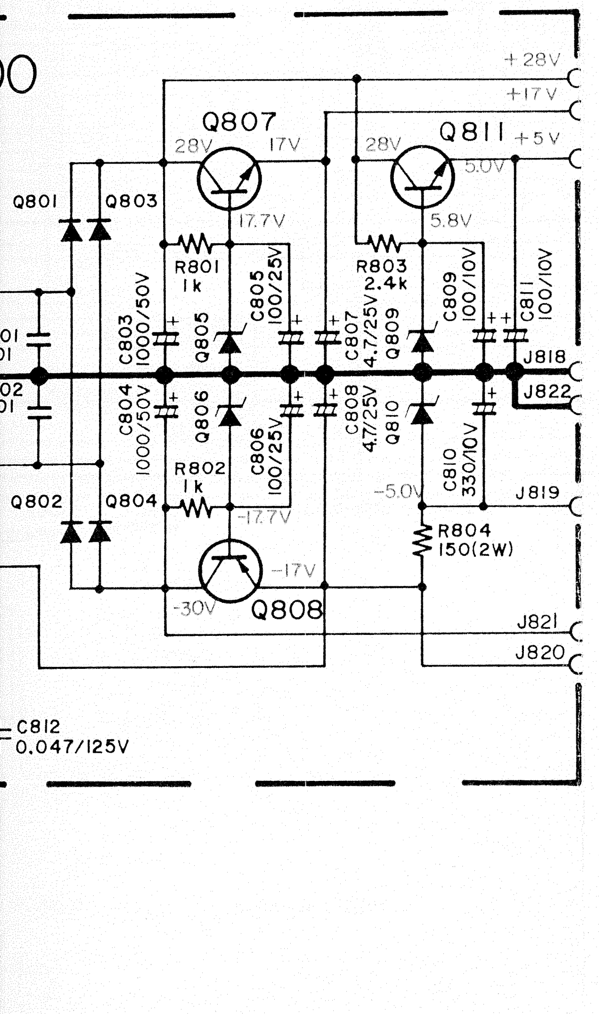

P800
J815
J816
J817
Q807
Q811
28V
17V
5.0V
Q801
Q803
17.7V
5.8V
J811
J812
R801
1k
R803
2.4k
F801
C801
0.01
C802
0.01
C803
1000/50V
C804
1000/50V
Q805
Q806
C805
100/25V
C806
100/25V
C807
4.7/25V
C808
4.7/25V
Q809
Q810
C809
100/10V
C810
330/10V
C811
100/10V
J818
J822
F802
J813
J814
Q802
Q804
R802
1k
R804
150(2W)
J819
Q808
J821
J820
C813
0.022
1000V
C812
0.022/1000V


P800
+28V
+17V
Q807
Q811
28V
17V
28V
+5V
5.0V
Q801
Q803
17.7V
5.8V
R801
1k
R803
2.4k
J801
C801
0.01
J802
C802
0.01
C803
1000/50V
C804
1000/50V
Q805
Q806
C805
100/25V
C806
100/25V
C807
4.7/25V
C808
4.7/25V
Q809
Q810
C809
100/10V
C810
330/10V
C811
100/10V
J818
J822
J803
AC1.6V
J804
Q802
Q804
R802
1k
-17.7V
-5.0V
R804
150(2W)
J819
J805
J806
AC1.6V
-17V
-30V
Q808
J821
J820
J807
J808
J809
C812
0.047/125V

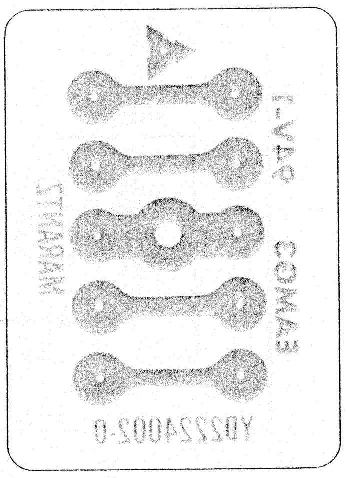
8.5 Output Wire Terminal (PV03) Sch

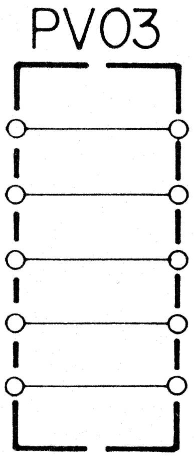

1-V40
EAW02
YAMAHA
YD2224002-0


P101
J101
J102
J103
J104
J105
J106
J107
J108
Q110
Q122
Q166
Q167
Q168
Q169
Q170
Q173
Q176
Q183

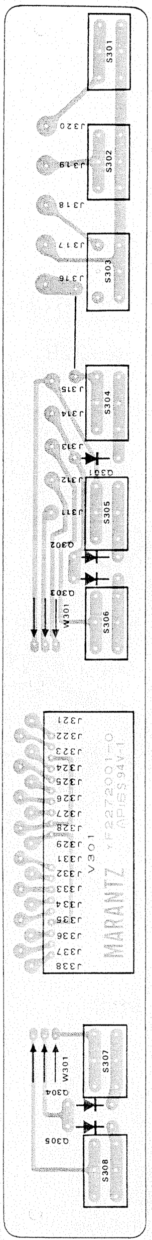

+28V
+17V
Q807
Q811
+5V
28V
17V
28V
5.0V
Q801
Q803
17.7V
5.8V
R801
1k
R803
2.4k
C803
1000/50V
Q805
C805
100/25V
C807
4.7/25V
Q809
C809
100/10V
C811
100/10V
J818
J822
C804
1000/50V
Q806
C806
100/25V
C808
4.7/25V
Q810
C810
330/10V
R802
1k
-5.0V
J819
Q802
Q804
-17.7V
R804
150(2W)
-17V
-30V
Q808
J821
J820
C812
0.047/125V

8.5 Output Wire Terminal (PV03) Schematic Diagram and Component Locations





8.2 Switch Operation Assembly (P300) Schematic Diagram and Component Locations


S301
J320
S302
J319
J318
S303
J317
J316
J315
S304
J314
J313
Q301
J312
S305
J311
Q302
Q303
W301
S306
J321
J322
J323
J324
J325
J326
J327
J328
J329
J331
J332
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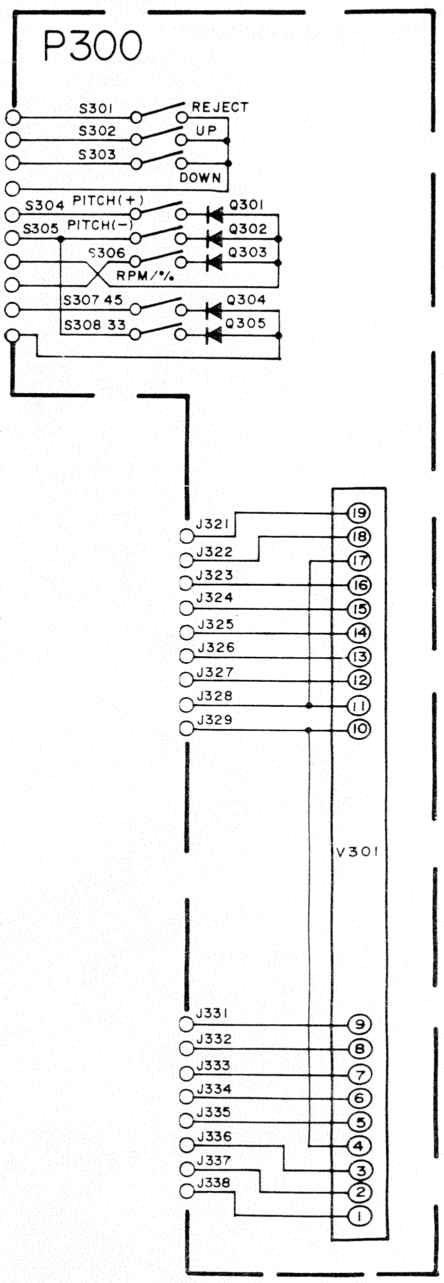
J334
J335
J336
J337
J338
V301
MARANTZ
S307
W301
Q304
Q305
S308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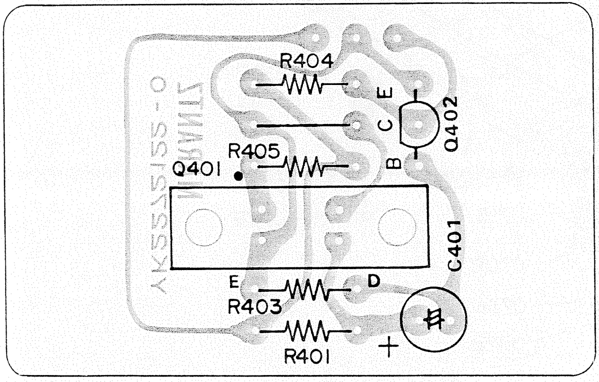
S301
S302
S303
REJECT
UP
DOWN
S304 PITCH(+)
S305 PITCH(−)
S306
RPM/%
S307 45
S308 33
Q301
Q302
Q303
Q304
Q305
J321
J322
J323
J324
J325
J326
J327
J328
J329
J331
J332
J333
J334
J335
J336
J337
J338
⑲
⑱
⑰
⑯
⑮
⑭
⑬
⑫
⑪
⑩
⑨
⑧
⑦
⑥
⑤
④
③
②
①
V301

8.3 Phono Unit Assembly (P400) Schematic Diagram and Component Locations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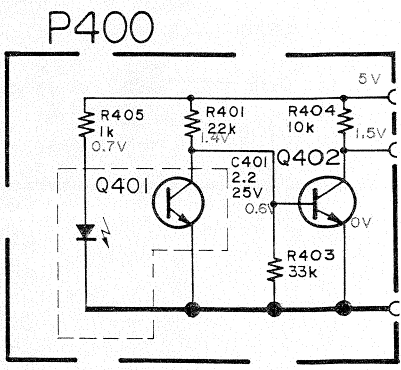
E
C
B
Q402
R405
Q401
C401
E
D
R403
R401
+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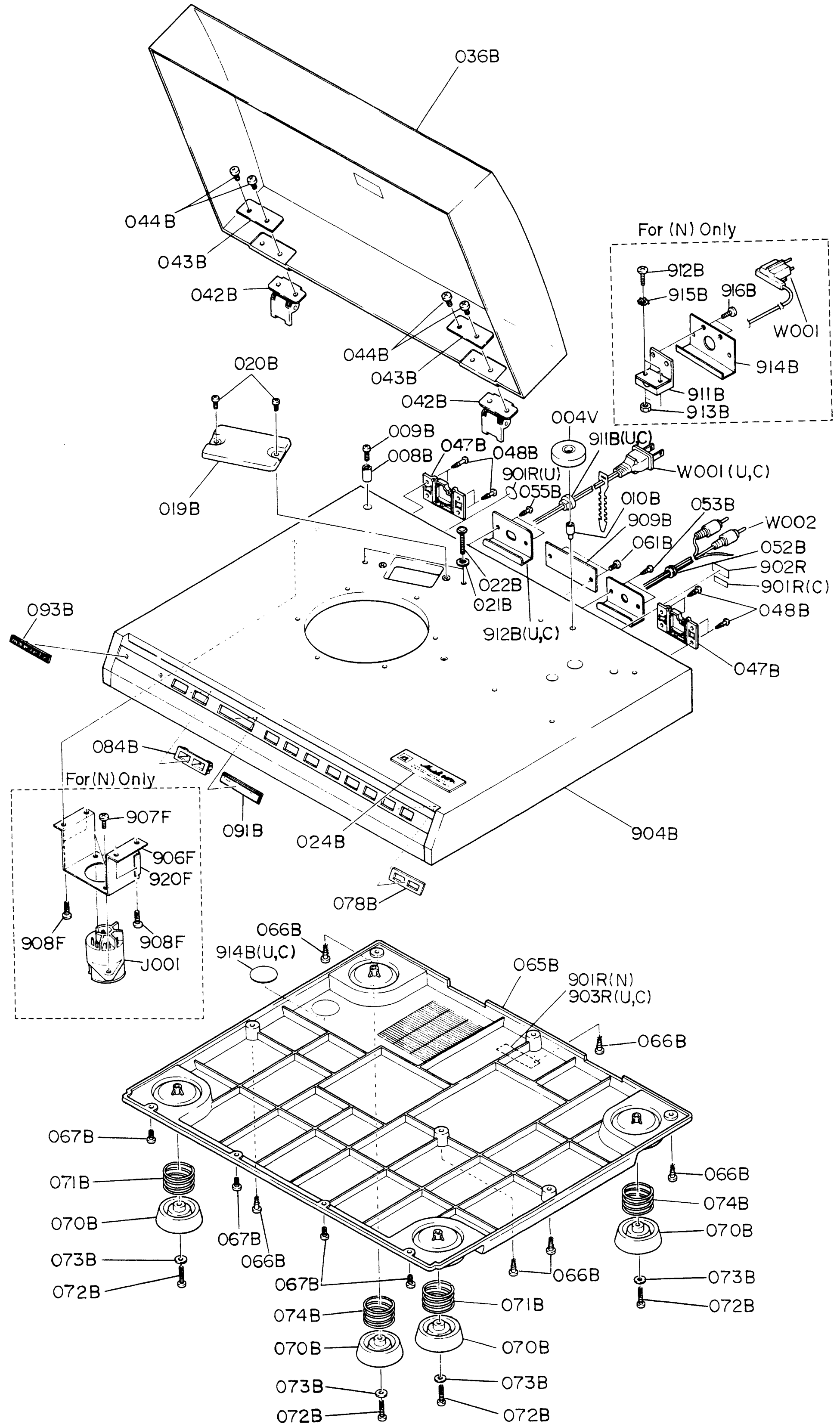
R405
1k
0.7V
R401
22k
1.4V
R404
10k
1.5V
C401
2.2
25V
Q402
Q401
0.6V
0V
R403
33k

9. EXPLODED VIEW AND PARTS LIST

[C01-99] Case and General Parts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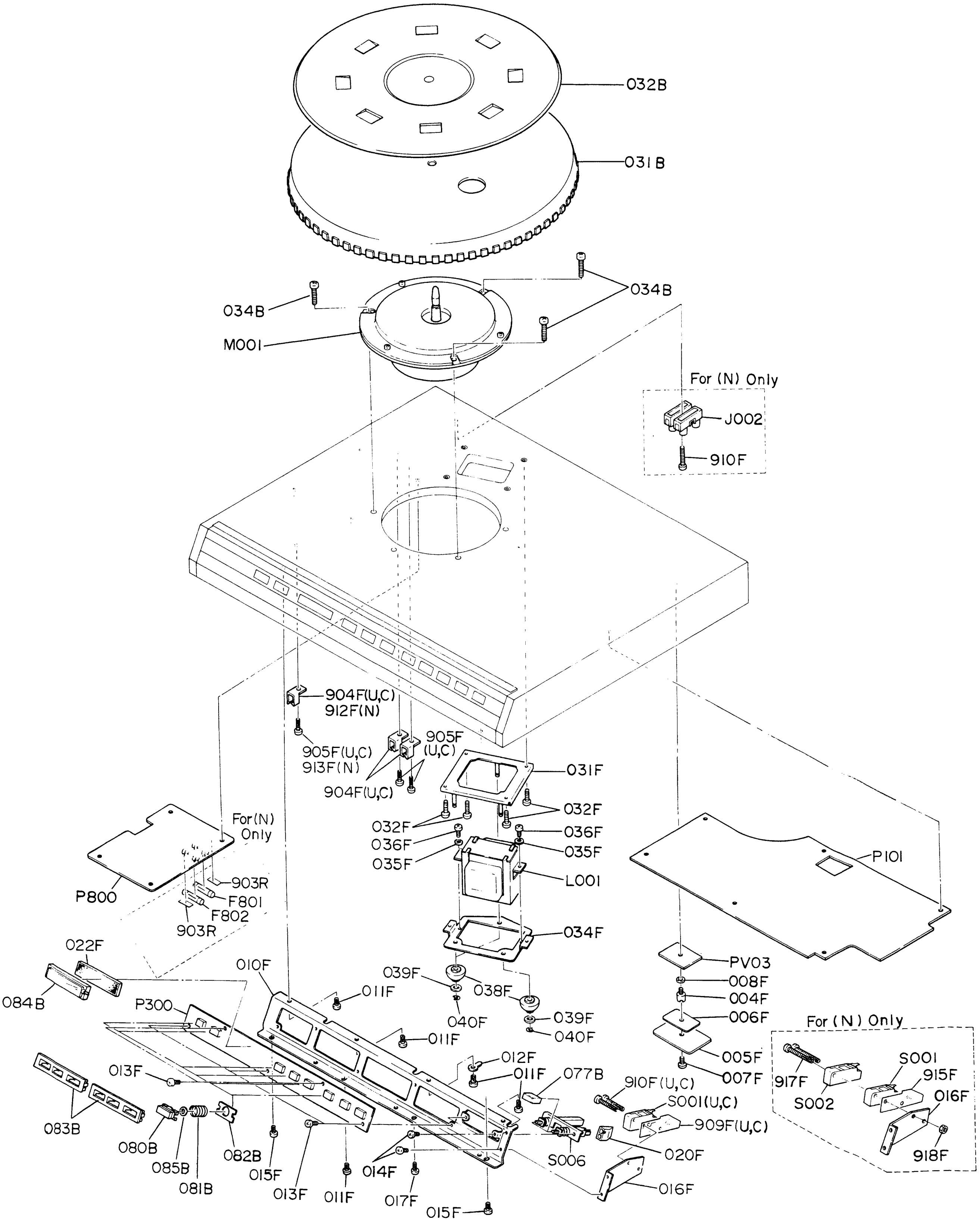
043B
042B
For (N) Only
912B
915B
916B
W001
914B
911B
913B
044B
043B
042B
020B
004V
911B(U,C)
009B
047B
008B
048B
901R(U)
055B
W001 (U,C)
019B
010B
909B
053B
W002
061B
052B
902R
901R(C)
022B
021B
048B
093B
912B(U,C)
047B
084B
For(N) Only
907F
906F
920F
091B
024B
904B
078B
908F
908F
J001
066B
914B(U,C)
065B
901R(N)
903R(U,C)
066B
067B
071B
070B
073B
072B
067B
066B
066B
074B
070B
067B
066B
073B
072B
074B
071B
070B
070B
073B
073B
072B
072B

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
A	1	1		2272064400	Case Assembly
A1			1	2272064410	Case Assembly
008B	1	1	1	2939259020	Bushing
009B	1	1	1	51543110S0	F.H. Wood Screw F3.1 x 10
010B	1	1	1	2939104020	Retainer
024B	1	1	1	2272251010	Badge
047B	2	2	2	2256160150	Bracket
048B	8	8	8	51522713S0	R.H. Wood Screw
078B	1	1	1	2272259030	Bushing
084B	1	1	1	2272259020	Bushing
091B	1	1	1	2272158010	Window
093B	1	1	1	2477251010	Badge
904B	1	1		2272064510	Case
904B			1	2272064520	Case
B	1	1	1	2224053400	Dust Cover Assembly
036B	1	1	1	2224053510	Cover
042B	2	2	2	2224153510	Hinge
043B	2	2	2	2224160260	Bracket
044B	4	4	4	51100410S9	B.H.M. Screw B4 x 10
019B	1	1	1	2272053010	Cover
020B	2	2	2	51100306B9	B.H.M. Screw B3 x 6
021B	2	2	2	2255861010	Label
022B	2	2	2	51440418Y0	L. Washer Screw L4 x 18
051B	1	1	1	2256160270	Bracket
052B	1	1	1	1455259070	Bushing
053B	2	2	2	51523110S0	R.H. Wood Screw R3.1 x 10
055B	2	2	2	51523110S0	R.H. Wood Screw R3.1 x 10
061B	2	2	2	51770308B0	OS Tapper Screw 3 x 8
065B	1	1	1	2272257010	Lid
066B	6	6	6	51523113A0	R.H. Wood Screw R3.1 x 13
067B	4	4	4	51300308U0	P.H. Tapped Screw P3 x 8
070B	4	4	4	2224057010	Leg
071B	2	2	2	2224115030	Spring
072B	4	4	4	51300316B0	P.H. Tapped Screw P3 x 16
073B	4	4	4	54110149A0	Flat Washer, L.
074B	2	2	2	2271115010	Spring
909B	1			2272265010	Indicator
909B		1		2272265020	Indicator
909B			1	2272265030	Indicator

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
911B	1	1		1455259030	Bushing
911B			1	2821259010	Bushing
912B	1	1		2256160260	Bracket
912B			2	51060312A9	P.H.M. Screw P3 x 12
913B			2	53110303A9	Hexagon Nut
914B	1	1		2939053020	Cover
914B			1	2272160080	Bracket
915B			2	54050300R0	T.L. Washer
916B			2	55060305S0	T.R. Rivet
906F			1	2272160060	Bracket
907F			2	51100308A9	B.H. M. Screw B3 x 8
908F			4	51400310A0	B.H. Tapped Screw B3 x 10
920F			1	2947259030	Bushing
901R	1			9511101060	Label
901R		1		2457861040	Label
901R			1	3889861010	Label
902R		1		9510911010	Label
902R			1	9510221010	Label
903R	2			3889861010	Label
903R		2		2911861180	Label
004V	1	1	1	2272362010	Rec. Adaptor
J001			1	BY03110010	Plug
W001	1	1		YC02000140	A.C. Power Cord
W001			1	YC01800160	A.C. Power Cord
W002	1	1	1	YB01000060	Connective Cord

[P01-99] Turn Table and Motor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031B
034B
034B
M001
For (N) Only
J002
910F
904F(U,C)
912F(N)
905F(U,C)
913F(N)
905F
(U,C)
904F(U,C)
031F
032F
032F
036F
036F
035F
035F
L001
For(N)
Only
P800
903R
F801
F802
903R
034F
P101
022F
084B
010F
039F
038F
011F
P300
040F
039F
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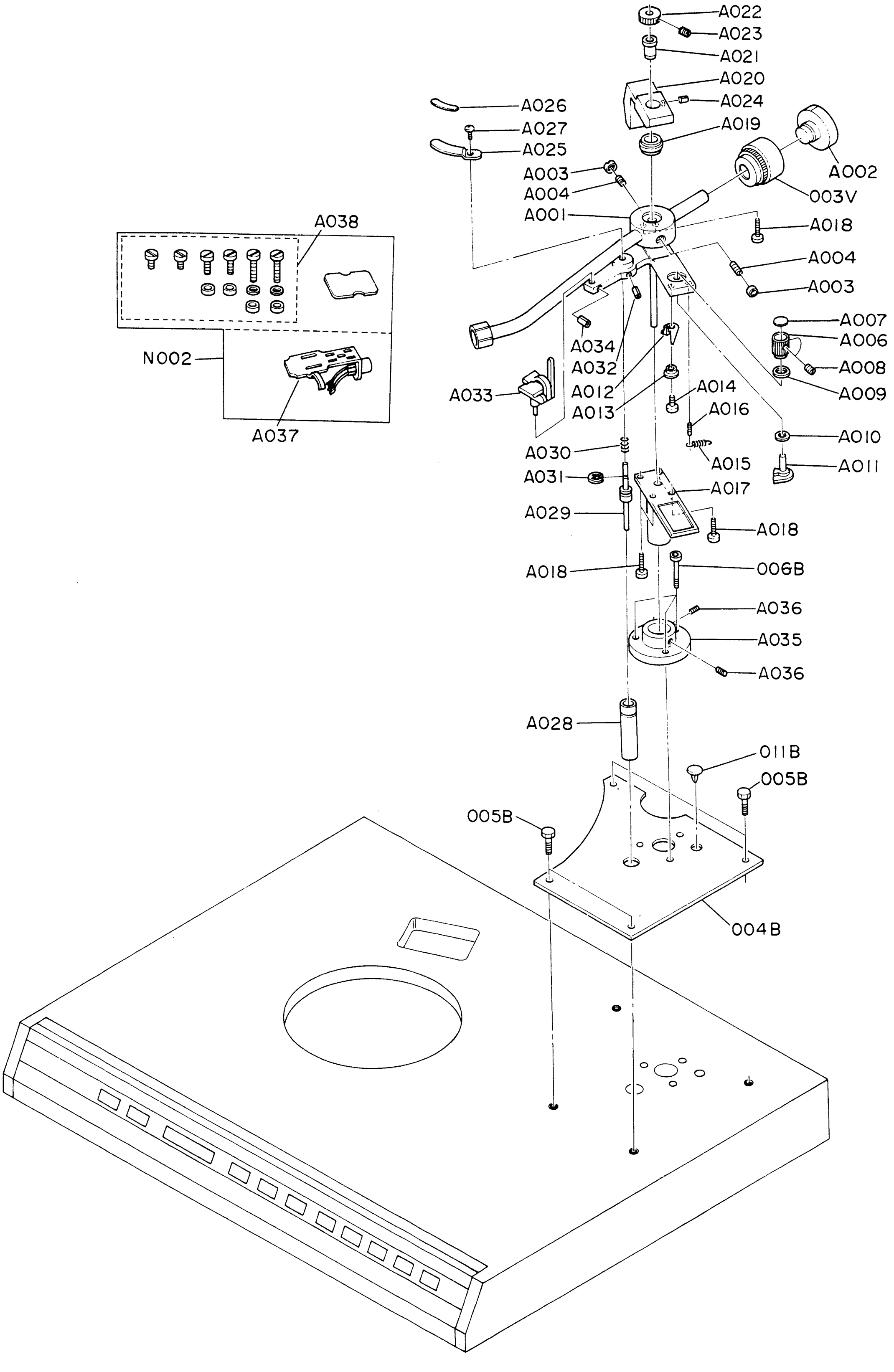
011F
PV03
008F
004F
006F
005F
007F
012F
011F
077B
013F
910F(U,C)
S001(U,C)
909F(U,C)
083B
080B
085B
081B
082B
015F
013F
011F
014F
017F
015F
S006
020F
016F
For (N) Only
917F
S002
S001
915F
016F
918F

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
C	1	1	1	2272054400	Cam Assembly
020F	1	1	1	2272054030	Cam
S006	1	1	1	SP04020260	Push Switch, Power Lever A/M
D	1	1	1	2272259400	Reject Pitch Knob Assembly
080B	1	1	1	2272154010	Knob
081B	1	1	1	2979115010	Spring
082B	1	1	1	2272005010	Clamper
085B	2	2	2	2272118020	Spacer
E	1	1	1	2272259410	Speed Select Knob Assembly
080B	1	1	1	2272154010	Knob
081B	1	1	1	2979115010	Spring
082B	1	1	1	2272005010	Clamper
085B	1	1	1	2272118020	Spacer
031B	1	1	1	2292165020	Turn Table
032B	1	1	1	2272107010	Sheet
034B	3	3	3	51100416S9	B.H.M. Screw B4 x 16
077B	2	2	2	2292154020	Knob, Power & A/M
004F	1	1	1	2224101010	Support
005F	1	1	1	2256109010	Shield
006F	1	1	1	2224120020	Insulator
007F	1	1	1	51100305A9	B.H.M. Screw B3 x 5
008F	1	1	1	2256055030	Collar
010F	1	1	1	2272160040	Bracket
011F	5	5	5	51280306B0	B.H. Tapped Screw B3 x 6
012F	1	1	1	62030049W0	Lug
013F	5	5	5	51280306B0	B.H. Tapped Screw B3 x 6
014F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
015F	3	3	3	51340306P0	F.H. Tapped Screw F3 x 6
016F	1	1	1	2272160070	Bracket
017F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
022F	1	1	1	2272118010	Spacer
031F	1	1	1	2272155010	Hanger
032F	4	4	4	51100312A0	B.H.M. Screw B3 x 12
034F	1	1	1	2272160050	Bracket
035F	2	2	2	54020401A0	Flat Washer, P.
036F	2	2	2	51100406A9	B.H.M. Screw B4 x 6
038F	3	3	3	2255056010	Buffer

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
039F	3	3	3	54020401A0	Flat Washer, P.
040F	3	3	3	64000300R0	RG Ring, E Type
904F	3	3		2887005010	Clamper
905F	3	3		51400310A0	B.H. Tapped Screw B3 x 10
909F	1	1		2272120030	Insulator
910F	2	2		51060316A9	P.H.M. Screw P3 x 16
910F			1	51400320A0	B.H. Tapped Screw B3 x 20
912F			1	2887005010	Clamper
913F			1	51400310A0	B.H. Tapped Screw B3 x 10
915F			1	2272120030	Insulator
917F			2	50060330B0	Screw 3 x 30
918F			2	53110303A9	Hexagon Nut
903R			2	9512601080	Label
F801			1	FS10050800	Fuse
F802			1	FS10050800	Fuse
J002			1	YL09020040	Terminal
L001	1	1		TS15407090	Power Transformer
L001			1	TS15407100	Power Transformer
M001	1	1	1	PM23300080	Phono Motor Unit
S001	1			SM01020350	Mini Switch
S001		1		SM01020330	Mini Switch
S001			1	SM01020180	Mini Switch
S002			1	SM01020180	Mini Switch
P101	1	1	1	YK22721210	P.W. Board, Control Circuit
	1	1	1	ZZ22721310	P.W. Board Assembly
P300	1	1	1	YF22720010	P.W. Board, Switch Operation
	1	1	1	ZZ22720010	P.W. Board Assembly
P800	1	1	1	YG22720010	P.W. Board, Power Supply
	1			ZZ22722010	P.W. Board Assembly
		1		ZZ22727010	P.W. Board Assembly
			1	ZZ22728010	P.W. Board Assembly
PV03	1	1	1	YD22240020	P.W. Board Connective
	1	1	1	ZZ22240020	P.W. Board Assembly

[P02-99] Tone Arm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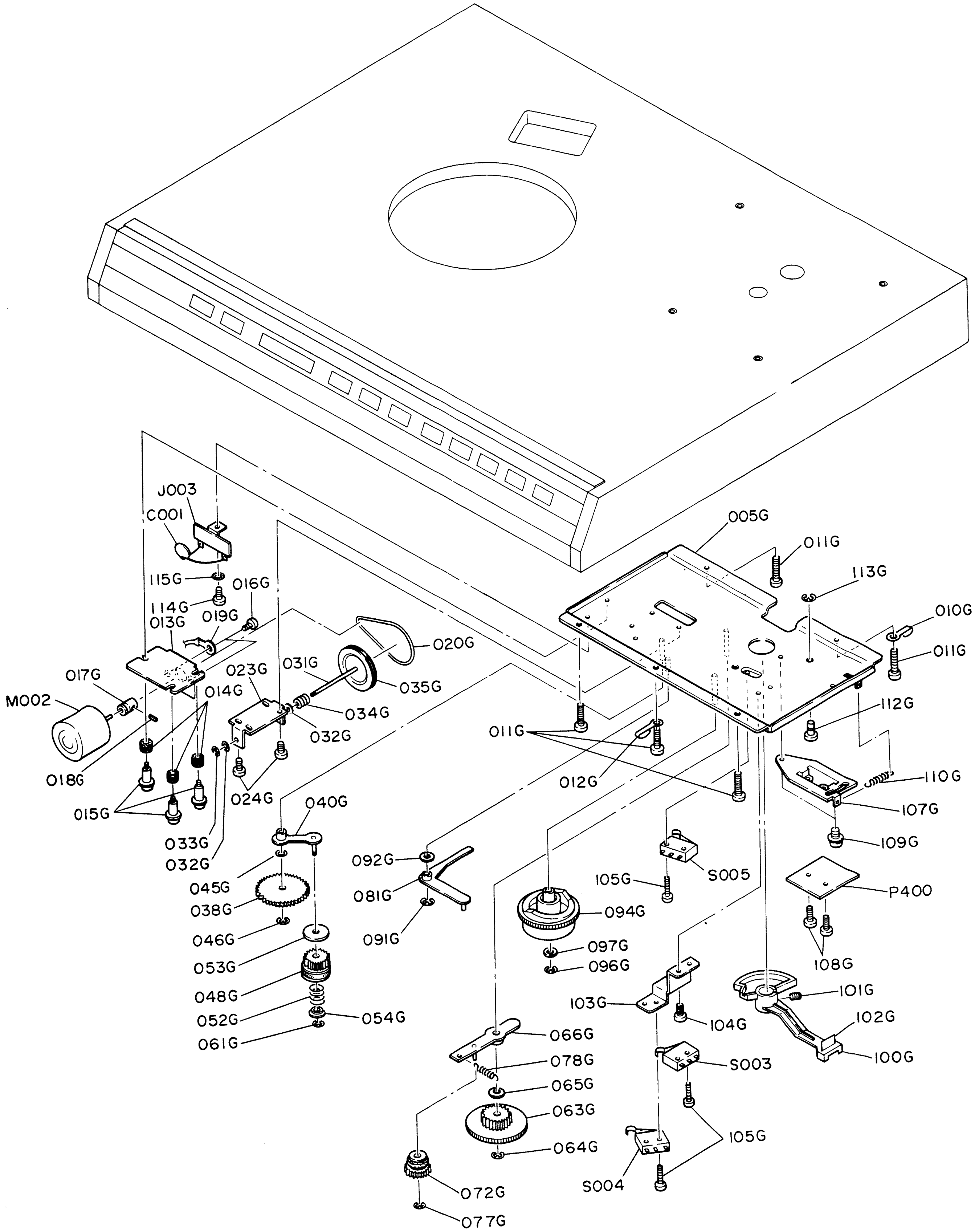
A017
A029
A018
A018
006B
A036
A035
A036
A028
011B
005B
005B
004B

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
N001	1	1	1	PA12239010	Tone Arm Assembly
A001	1	1	1	2272002210	Pipe Arm Assembly
A002	1	1	1	2272008210	Weight Assembly (Sub)
A003	2	2	2	2272104210	Nut
A004	2	2	2	2272104220	Pivot
A006	1	1	1	2272154210	Knob
A007	1	1	1	2272302210	Dial
A008	2	2	2	51652605B0	Set Screw H.P. 2.6 x 5
A009	1	1	1	59071105G9	Washer
A010	1	1	1	59040605G9	Washer
A011	1	1	1	2272054210	Cam
A012	1	1	1	2272354210	Lever
A013	1	1	1	2272055210	Collar
A014	1	1	1	51062603A0	P.H.M. Screw P2.6 x 3
A015	1	1	1	2272115210	Spring
A016	1	1	1	2272112210	Shaft
A017	1	1	1	2272160220	Bracket
A018	6	6	6	51062606B0	P.H.M. Screw P2.6 x 6
A019	1	1	1	2272067210	Cap
A020	1	1	1	2272160230	Bracket
A021	1	1	1	2272067220	Cap
A022	1	1	1	2272154220	Knob
A023	1	1	1	51640203B0	Set Screw C.P. 2 x 3
A024	1	1	1	2272005210	Clamper
A025	1	1	1	2272354220	Lever
A026	1	1	1	2272056210	Buffer
A027	1	1	1	51060203B0	P.H.M. Screw P2 x 3
A028	1	1	1	2272124210	Cylinder
A029	1	1	1	2272276210	Piston Assembly
A030	1	1	1	2272115220	Spring

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
A031	1	1	1	64000200R0	RG Ring, E Type
A032	1	1	1	51640305B9	Set Screw C.P. 3 x 5
A033	1	1	1	2272005220	Arm Rest Assembly
A034	1	1	1	51690303S9	Socket Screw H.P. 3 x 3
A035	1	1	1	2272160240	Base Bracket Assembly
A036	2	2	2	51690303S9	Socket Screw H.P. 3 x 3
A037	1	1	1	YS02040120	Head Shell
A038	1	1	1	2272160250	Head Shell Screw Assembly
N002	1	1	1	YS02040140	Head Shell Assembly
003V	1	1	1	2272008010	Main Weight Assembly
004B	1	1	1	2272063020	Escutcheon
005B	4	4	4	52011699J0	H. Head Bolt
006B	3	3	3	52730320S0	H.S. Head Bolt
011B	1	1	1	2262259010	Bushing

[P03-99] Parts assembled on the Chassis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C001
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011G
113G
115G
016G
114G
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013G
010G
011G
020G
017G
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035G
M002
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032G
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109G
032G
092G
105G
S005
045G
081G
P400
038G
094G
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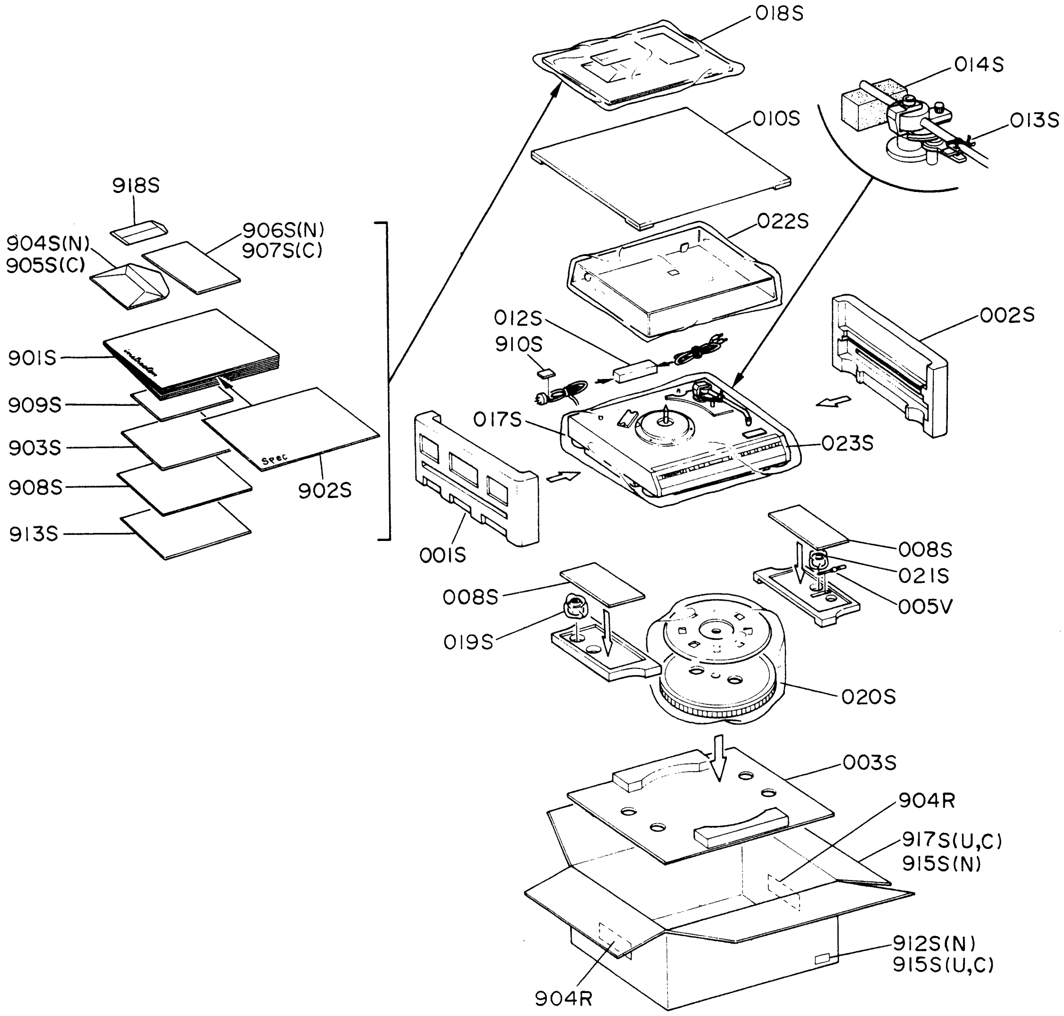
091G
097G
096G
108G
053G
101G
103G
102G
048G
104G
052G
054G
066G
100G
061G
078G
S003
065G
063G
105G
064G
S004
072G
077G

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
F	1	1	1	2272058400	Worm Gear Assembly
023G	1	1	1	2272106010	Sustainer
031G	1	1	1	2272112010	Shaft
032G	2	2	2	59020402G9	Washer
033G	1	1	1	64001500R0	RG Ring, E Type
034G	1	1	1	2272058030	Gear
035G	1	1	1	2272262010	Pulley
G	1	1	1	2272002400	Idler Arm Assembly
040G	1	1	1	2272002510	Arm
048G	1	1	1	2272001520	Idler
052G	1	1	1	2272115020	Spring
053G	1	1	1	2272061010	Clutch
054G	1	1	1	2272067010	Cap
061G	1	1	1	64000200R0	RG Ring, E Type
005G	1	1	1	2272105510	Chassis
010G	1	1	1	62030049W0	Lug
011G	5	5	5	51100312A9	B.H.M. Screw B3 x 12
012G	1	1	1	4220005020	Clamper
013G	1	1	1	2272160010	Bracket
014G	3	3	3	4383259010	Bushing
015G	3	3	3	4367112150	Shaft
016G	2	2	2	51100203A0	B.H.M. Screw B2 x 3
017G	1	1	1	2272262020	Pulley
018G	1	1	1	51650203A0	Set Screw, H.P. 2 x 3
019G	1	1	1	62021030W0	Lug
020G	1	1	1	2272264010	Belt
024G	2	2	2	51100306A9	B.H.M. Screw B3 x 6
038G	1	1	1	2272058020	Gear
045G	1	1	1	59047502G9	Washer
046G	1	1	1	64000300R0	RG Ring, E Type
063G	1	1	1	2272058010	Gear
064G	1	1	1	64000300R0	RG Ring, E Type
065G	1	1	1	59047502G9	Washer
066G	1	1	1	2272002520	Arm

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
072G	1	1	1	2272001510	Idler
077G	1	1	1	64000200R0	RG Ring, E Type
078G	1	1	1	2272115010	Spring
081G	1	1	1	2272354510	Lever
091G	1	1	1	64000300R0	RG Ring, E Type
092G	1	1	1	59047502G9	Washer
094G	1	1	1	2272054010	Cam
096G	1	1	1	64000300R0	RG Ring, E Type
097G	1	1	1	59047502G9	Washer
100G	1	1	1	2272002010	Arm
101G	1	1	1	51690306Q9	Socket Screw, HP 3 x 6
102G	1	1	1	2272107020	Sheet
103G	1	1	1	2272160030	Bracket
104G	1	1	1	51280306B0	B.H. Tapped Screw B3 x 6
105G	3	3	3	51100210A0	B.H.M. Screw B2 x 10
107G	1	1	1	2272160020	Bracket
108G	2	2	2	51060308A9	P.H.M. Screw P3 x 8
109G	2	2	2	51202603A0	P.F.W.M. Screw P2.6 x 3
110G	1	1	1	2256115050	Spring
112G	1	1	1	2272054020	Cam
113G	1	1	1	64070300R0	RG Ring, BE Type
114G	1	1	1	51280306B0	B.H. Tapped Screw B3 x 6
115G	1	1	1	54050300A0	T.L. Washer
C001	1	1	1	DK16103300	Ceramic, 0.01μF, ±10%, 50V
J003	1	1	1	YL01020080	Terminal
M002	1	1	1	MM00600050	D.C. Motor
S003	1	1	1	SM02010150	Mini Switch, Arm Control SW-1
S004	1	1	1	SM02010150	Mini Switch, Arm Control SW-2
S005	1	1	1	SM02010150	Mini Switch, Arm Control SW-3
P400	1	1	1	YK22721220	P.W. Board, Phono Unit
	1	1	1	ZZ22721320	P.W. Board Assembly

[H01-99] Packing Materials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012S
910S
901S
909S
017S
023S
903S
908S
902S
913S
001S
008S
021S
005V
008S
019S
020S
003S
904R
917S(U,C)
915S(N)
912S(N)
915S(U,C)
904R

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001S	1	1	1	2272809010	Cushion
002S	1	1	1	2272809020	Cushion
003S	1	1	1	2272807010	Reinforcing
008S	2	2	2	2292807030	Reinforcing
010S	1	1	1	2272807020	Reinforcing
012S	1	1	1	2864804010	Sleeve
013S	1	1	1	2256005050	Clamper
014S	1	1	1	2272809030	Cushion
017S	1	1	1	9090909040	Polyethy Sheet
018S	1	1	1	9013025010	Polyethy Bag
019S	1	1	1	9010510010	Polyethy Bag
020S	1	1	1	9013540010	Polyethy Bag
021S	1	1	1	9010810010	Polyethy Bag
022S	1	1	1	9014543380	Polyethy Bag
023S	1	1	1	2918107230	Sheet
901S	1			2272851010	Instructions
901S		1	1	2272851310	Instructions
902S	1			2272851020	Instructions
902S		1		2272851050	Instructions
902S			1	2272851030	Instructions

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
903S		1		2886851100	Instructions
904S			1	2818813010	Envelope
905S		1		2918813010	Envelope
906S			1	9630000180	Guarantee Card
907S		1		9630000180	Guarantee Card
908S		1		9650000050	S. Station Card
909S		1		2818854040	Guarantee Card
910S			1	9560000040	Hang Tag
912S			3	9526019060	Serial No. Card
913S	1			2818854020	Guarantee Card
915S	3			9526019010	Serial No. Card
915S		3		9526019020	Serial No. Card
915S			1	2272801010	Packing Case
917S	1			2272801010	Packing Case
917S		1		2272801150	Packing Case
918S	1			2225813010	Envelope
005V	1	1	1	2939164010	Adjuster
904R		2		9510901020	Label

10. ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
					P101-CONTROL CIRCUIT BOARD
P101	1	1	1	YK22721210	P.W. Board, Control Circuit
	1	1	1	ZZ22721310	P.W. Board Assembly
					P101-CAPACITORS
C101	1	1	1	EQ47501610	Elect 4.7μF 16V
C102	1	1	1	DF17103300	Film 0.01μF ±20% 50V
C103	1	1	1	DF17103300	Film 0.01μF ±20% 50V
C104	1	1	1	EQ22505020	Elect 2.2μF 50V
C105	1	1	1	DF17122300	Film 0.0012μF ±20% 50V
C106	1	1	1	DK18473310	Ceramic 0.047μF +100%−0,50V
C107	1	1	1	EA10702590	Elect 100μF 25V
C108	1	1	1	EA10702590	Elect 100μF 25V
C109	1	1	1	DK18473310	Ceramic 0.047μF +100%−0,50V
C110	1	1	1	EA22601690	Elect 22μF 16V
C111	1	1	1	EA10601690	Elect 10μF 16V
C112	1	1	1	DF17222300	Film 0.0022μF ±20% 50V
C113	1	1	1	EA10601690	Elect 10μF 16V
C114	1	1	1	DK18473310	Ceramic 0.047μF +100%−0,50V
C115	1	1	1	EA22601090	Elect 22μF 10V
C116	1	1	1	DD15101350	Ceramic 100pF ±5% 50V
C117	1	1	1	DK16472300	Ceramic 0.0047μF ±10% 50V
C118	1	1	1	DK16103300	Ceramic 0.01μF ±10% 50V
C119	1	1	1	DD15151370	Ceramic 150pF ±5% 50V
C120	1	1	1	DK16102300	Ceramic 0.001μF ±10% 50V
C121	1	1	1	DD15200300	Ceramic 20pF ±5% 50V
C122	1	1	1	DK16471300	Ceramic 470pF ±10% 50V
C123	1	1	1	DD15331350	Ceramic 330pF ±5% 50V
C124	1	1	1	DD15331350	Ceramic 330pF ±5% 50V
C125	1	1	1	DD15101350	Ceramic 100pF ±5% 50V
C126	1	1	1	DK17223300	Ceramic 0.022μF ±20% 50V
C127	1	1	1	DD15121360	Ceramic 120pF ±5% 50V
C128	1	1	1	DD15121360	Ceramic 120pF ±5% 50V
C129	1	1	1	DK17223300	Ceramic 0.022μF ±20% 50V
C130	1	1	1	EA10602590	Elect 10μF 25V
C131	1	1	1	DK16222300	Ceramic 0.0022μF ±10% 50V
C132	1	1	1	DK16103300	Ceramic 0.01μF ±10% 50V
C133	1	1	1	EA10505090	Elect 1μF 50V
C134	1	1	1	EA22601690	Elect 22μF 16V
C135	1	1	1	DF17273300	Film 0.027μF ±20% 50V
C136	1	1	1	DF17273300	Film 0.027μF ±20% 50V
C137	1	1	1	DF17273300	Film 0.027μF ±20% 50V
C138	1	1	1	DF17273300	Film 0.027μF ±20% 50V
C139	1	1	1	DF17333300	Film 0.033μF ±20% 50V
C140	1	1	1	EA10601690	Elect 10μF 16V
C141	1	1	1	EQ22601610	Elect 22μF 16V
C142	1	1	1	EA47601090	Elect 47μF 10V
C143	1	1	1	DF16473300	Film 0.047μF ±10% 50V
C144	1	1	1	DF17104300	Film 0.1μF ±20% 50V
C145	1	1	1	DF17103300	Film 0.01μF ±20% 50V
C146	1	1	1	DF17103300	Film 0.01μF ±20% 50V
C147	1	1	1	DF17104300	Film 0.1μF ±20% 50V
C148	1	1	1	DF15104300	Film 0.1μF ±5% 50V
C149	1	1	1	DF15104300	Film 0.1μF ±5% 50V
C150	1	1	1	DF15104300	Film 0.1μF ±5% 50V
C152	1	1	1	DF17104300	Film 0.1μF ±20% 50V
C153	1	1	1	EA10505090	Elect 1μF 50V
C154	1	1	1	DF17473300	Film 0.047μF ±20% 50V
C155	1	1	1	EA22700690	Elect 220μF 6.3V
C156	1	1	1	DF17473300	Film 0.047μF ±20% 50V
C157	1	1	1	DD15240300	Ceramic 24pF ±5% 50V
C158	1	1	1	DK16472300	Ceramic 0.0047μF ±20% 50V
C159	1	1	1	DF17103300	Film 0.01μF ±20% 50V
C160	1	1	1	DK16102300	Ceramic 0.001μF ±10% 50V
C161	1	1	1	EA22701090	Elect 220μF 10V
C162	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C163	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C164	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C165	1	1	1	EA33505090	Elect 3.3μF 50V
C166	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C167	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C168	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C169	1	1	1	CT15000010	Trimming, 50pF
C170	1	1	1	EQ47505010	Elect 4.7μF ±20% 50V
C171	1	1	1	EQ47505010	Elect 4.7μF ±20% 50V
C172	1	1	1	EQ47505010	Elect 4.7μF ±20% 50V
C173	1	1	1	EA47601090	Elect 47μF 10V
C174	1	1	1	EA10505090	Elect 1μF 50V
C175	1	1	1	DK18473310	Ceramic 0.047μF, +100%−0,50V
C176	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C177	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C178	1	1	1	DK18473310	Ceramic 0.047μF, +100%−0,50V
C179	1	1	1	DK18473310	Ceramic 0.047μF, +100%−0,50V
C180	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C181	1	1	1	DK17103300	Ceramic 0.01μF ±20% 50V
C182	1	1	1	EQ47405010	Elect 0.47μF ±20% 50V
C183	1	1	1	EQ47405010	Elect 0.47μF ±20% 50V
C184	1	1	1	DK18473310	Ceramic 0.047μF, +100%−0,50V
					P101-RESISTORS (All resistors are ±5% and 1/4W)
R101	1	1	1	GD05471140	470Ω
R102	1	1	1	GD05684140	680kΩ
R103	1	1	1	GD05273140	27kΩ
R104	1	1	1	GD05223140	22kΩ
R105	1	1	1	GD05622140	6.2kΩ
R106	1	1	1	GD05472140	4.7kΩ
R107	1	1	1	GD05104140	100kΩ
R108	1	1	1	GD05303140	30kΩ
R109	1	1	1	GD05103140	10kΩ
R110	1	1	1	GD05563140	56kΩ
R111	1	1	1	GD05103140	10kΩ
R112	1	1	1	GD05203140	20kΩ
R113	1	1	1	GD05103140	10kΩ
R114	1	1	1	GD05103140	10kΩ
R115	1	1	1	GD05203140	20kΩ
R116	1	1	1	GD05223140	22kΩ
R117	1	1	1	GD05823140	82kΩ
R118	1	1	1	GD05222140	2.2kΩ
R119	1	1	1	GD05104140	100kΩ
R120	1	1	1	GD05103140	10kΩ
R121	1	1	1	GD05102140	1kΩ
R122	1	1	1	GD05561140	560Ω
R123	1	1	1	GD05224140	220kΩ
R124	1	1	1	GD05224140	220kΩ
R125	1	1	1	GD05154140	150kΩ
R126	1	1	1	GD05393140	39kΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R127	1	1	1	GD05103140	10kΩ
R128	1	1	1	GD05102140	1kΩ
R129	1	1	1	GD05563140	56kΩ
R130	1	1	1	GD05103140	10kΩ
R131	1	1	1	GD05102140	1kΩ
R132	1	1	1	GD05222140	2.2kΩ
R133	1	1	1	GD05102140	1kΩ
R134	1	1	1	GD05153140	15kΩ
R135	1	1	1	GD05471140	470Ω
R136	1	1	1	GD05682140	6.8kΩ
R137	1	1	1	GD05823140	82kΩ
R138	1	1	1	GD05104140	100kΩ
R139	1	1	1	GD05101140	100Ω
R140	1	1	1	GD05470140	47Ω
R141	1	1	1	GD05273140	27kΩ
R142	1	1	1	GD05303140	30kΩ
R143	1	1	1	GD05223140	22kΩ
R144	1	1	1	GD05102140	1kΩ
R145	1	1	1	GD05102140	1kΩ
R146	1	1	1	GD05102140	1kΩ
R147	1	1	1	GD05474140	470kΩ
R148	1	1	1	GD05563140	56kΩ
R149	1	1	1	GD05154140	150kΩ
R150	1	1	1	GD05334140	330kΩ
R151	1	1	1	GD05225140	2.2MΩ
R153	1	1	1	GD05563140	56kΩ
R154	1	1	1	GD05302140	3kΩ
R155	1	1	1	GD05152140	1.5kΩ
R156	1	1	1	GD05822140	8.2kΩ
R157	1	1	1	GD05682140	6.8kΩ
R158	1	1	1	GD05223140	22kΩ
R159	1	1	1	GD05224140	220kΩ
R160	1	1	1	GD05681140	680Ω
R161	1	1	1	GD05102140	1kΩ
R162	1	1	1	GD05102140	1kΩ
R163	1	1	1	GD05221140	220Ω
R164	1	1	1	GD05272140	2.7kΩ
R165	1	1	1	GD05221140	220Ω
R166	1	1	1	GD05222140	2.2kΩ
R167	1	1	1	GD05104140	100kΩ
R168	1	1	1	GD05472140	4.7kΩ
R169	1	1	1	GD05223140	22kΩ
R170	1	1	1	GD05334140	330kΩ
R171	1	1	1	GD05223140	22kΩ
R172	1	1	1	GD05334140	330kΩ
R173	1	1	1	GD05104140	100kΩ
R174	1	1	1	GD05222140	2.2kΩ
R175	1	1	1	GD05104140	199kΩ
R176	1	1	1	GD05222140	2.2kΩ
R177	1	1	1	GD05223140	22kΩ
R178	1	1	1	GD05334140	330kΩ
R179	1	1	1	GD05153140	15kΩ
R180	1	1	1	GD05104140	100kΩ
R181	1	1	1	GD05101140	100Ω
R182	1	1	1	GD05753140	75kΩ
R183	1	1	1	GD05753140	75kΩ
R184	1	1	1	GD05273140	27kΩ
R185	1	1	1	GD05184140	180kΩ
R186	1	1	1	GD05333140	33kΩ
R187	1	1	1	GD05472140	4.7kΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R188	1	1	1	GD05223140	22kΩ
R189	1	1	1	GD05334140	330kΩ
R190	1	1	1	GD05223140	22kΩ
R191	1	1	1	GD05223140	22kΩ
R192	1	1	1	GD05472140	4.7kΩ
R193	1	1	1	GD05623140	62kΩ
R194	1	1	1	GD05623140	62kΩ
R195	1	1	1	GD05623140	62kΩ
R196	1	1	1	GD05623140	62kΩ
R197	1	1	1	GD05622140	6.2kΩ
R198	1	1	1	GD05622140	6.2kΩ
R199	1	1	1	RA02220110	Trimming, 2.2kΩ
R200	1	1	1	GD05332140	3.3kΩ
R201	1	1	1	GD05473140	47kΩ
R202	1	1	1	GD05473140	47kΩ
R203	1	1	1	GD05473140	47kΩ
R204	1	1	1	GD05473140	47kΩ
R205	1	1	1	GD05473140	47kΩ
R206	1	1	1	GD05473140	47kΩ
R207	1	1	1	GD05473140	47kΩ
R208	1	1	1	GD05473140	47kΩ
R209	1	1	1	GD05473140	47kΩ
R210	1	1	1	GD05473140	47kΩ
R211	1	1	1	GD05473140	47kΩ
R212	1	1	1	GD05473140	47kΩ
R213	1	1	1	GD05473140	47kΩ
R214	1	1	1	GD05473140	47kΩ
R215	1	1	1	GD05473140	47kΩ
R216	1	1	1	GD05123140	12kΩ
R217	1	1	1	GD05123140	12kΩ
R218	1	1	1	GD05123140	12kΩ
R219	1	1	1	GD05123140	12kΩ
R220	1	1	1	GD05123140	12kΩ
R221	1	1	1	GD05123140	12kΩ
R222	1	1	1	GD05123140	12kΩ
R223	1	1	1	GD05123140	12kΩ
R224	1	1	1	GD05123140	12kΩ
R225	1	1	1	GD05123140	12kΩ
R226	1	1	1	GD05123140	12kΩ
R227	1	1	1	GD05123140	12kΩ
R228	1	1	1	GD05123140	12kΩ
R229	1	1	1	GD05123140	12kΩ
R230	1	1	1	GD05123140	12kΩ
R231	1	1	1	GD05273140	27kΩ
R232	1	1	1	GD05273140	27kΩ
R233	1	1	1	GD05273140	27kΩ
R234	1	1	1	GD05273140	27kΩ
R235	1	1	1	GD05273140	27kΩ
R236	1	1	1	GD05273140	27kΩ
R237	1	1	1	GD05273140	27kΩ
R238	1	1	1	GD05273140	27kΩ
R239	1	1	1	GD05273140	27kΩ
R240	1	1	1	GD05273140	27kΩ
R241	1	1	1	Gd05273140	27kΩ
R242	1	1	1	GD05273140	27kΩ
R243	1	1	1	GD05273140	27kΩ
R244	1	1	1	GD05273140	27kΩ
R245	1	1	1	GD05273140	27kΩ
R246	1	1	1	GD05103140	10kΩ
R247	1	1	1	GD05104140	100kΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R249	1	1	1	GD05470140	47Ω
R250	1	1	1	GD05104140	100kΩ
R251	1	1	1	GD05103140	10kΩ
R252	1	1	1	GD05473140	47kΩ
R253	1	1	1	GD05105140	1MΩ
R254	1	1	1	GD05105140	1MΩ
R255	1	1	1	GD05152140	1.5kΩ
R256	1	1	1	GD05472140	4.7kΩ
R257	1	1	1	GD05103140	10kΩ
R258	1	1	1	GD05103140	10kΩ
R259	1	1	1	GD05103140	10kΩ
R260	1	1	1	GD05103140	10kΩ
R261	1	1	1	GD05103140	10kΩ
R262	1	1	1	GD05103140	10kΩ
R263	1	1	1	GD05103140	10kΩ
R264	1	1	1	GD05103140	10kΩ
R265	1	1	1	GD05103140	10kΩ
R266	1	1	1	GD05103140	10kΩ
R267	1	1	1	GD05102140	1kΩ
R268	1	1	1	GD05103140	10kΩ
R269	1	1	1	GD05103140	10kΩ
R270	1	1	1	GD05472140	4.7kΩ
R271	1	1	1	GD05103140	10kΩ
R272	1	1	1	GD05103140	10kΩ
					P101-SEMICONDUCTORS
Q101	1	1	1	HC10003090	IC, NJM4558D
Q102	1	1	1	HD20001210	Diode, 1S2473
Q103	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q104	1	1	1	HD20001210	Diode, 1S2473
Q105	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q106	1	1	1	HD20001210	Diode, 1S2473
Q107	1	1	1	HD20001210	Diode, 1S2473
Q108	1	1	1	HD20001210	Diode, 1S2473
Q109	1	1	1	HD20001210	Diode, 1S2473
Q110	1	1	1	HC10004110	IC, SN7400
Q111	1	1	1	HD20001210	Diode, 1S2473
Q112	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q113	1	1	1	HD10001050	Diode, 1N60
Q114	1	1	1	HD40001030	Varicap, SVC303
Q115	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q116	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q117	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q118	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q119	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q120	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q121	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q122	1	1	1	HC10008060	IC, μPD861C
Q123	1	1	1	HF200301C0	F.E.T., 2SK30Y
Q124	1	1	1	HF200301C0	F.E.T., 2SK30Y
Q125	1	1	1	HD20001210	Diode, 1S2473
Q126	1	1	1	HD20001210	Diode, 1S2473
Q127	1	1	1	HT313181R0	Transistor, 2SC1318R
Q128	1	1	1	HT107201R0	Transistor, 2SA720R
Q129	1	1	1	HT205962B0	Transistor, 2SB596 O or Y
Q130	1	1	1	HT405262B0	Transistor, 2SD526 O or Y
Q131	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q132	1	1	1	HT405711L0	Transistor, 2SD571L
Q133	1	1	1	HT206051L0	Transistor, 2SB605L

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
Q134	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q135	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q136	1	1	1	HT206051L0	Transistor, 2SB605L
Q137	1	1	1	HT404711L0	Transistor, 2SD471L
Q138	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q139	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q140	1	1	1	HT404711L0	Transistor, 2SD471L
Q141	1	1	1	HT206051L0	Transistor, 2SB605L
Q142	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q143	1	1	1	HD20023100	Diode, 10E-1
Q144	1	1	1	HD20023100	Diode, 10E-1
Q145	1	1	1	HD20023100	Diode, 10E-1
Q146	1	1	1	HD20001210	Diode, 1S2473
Q147	1	1	1	HD20001210	Diode, 1S2473
Q148	1	1	1	HD20023100	Diode, 10E-1
Q149	1	1	1	HD20023100	Diode, 10E-1
Q150	1	1	1	HD20023100	Diode, 10E-1
Q151	1	1	1	HD20023100	Diode, 10E-1
Q152	1	1	1	HD20023100	Diode, 10E-1
Q153	1	1	1	HD20023100	Diode, 10E-1
Q154	1	1	1	HD20023100	Diode, 10E-1
Q155	1	1	1	HD20023100	Diode, 10E-1
Q156	1	1	1	HD20023100	Diode, 10E-1
Q157	1	1	1	HD20023100	Diode, 10E-1
Q158	1	1	1	HD20023100	Diode, 10E-1
Q159	1	1	1	HD20001210	Diode, 1S2473
Q160	1	1	1	HD20023100	Diode, 10E-1
Q161	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q162	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q163	1	1	1	HD20001210	Diode, 1S2473
Q164	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q165	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q166	1	1	1	HC10003090	IC, NJM4558D
Q167	1	1	1	HC10030050	IC, TD3402AP
Q168	1	1	1	HC10031050	IC, TD3474AP
Q169	1	1	1	HC10031050	IC, TD3474AP
Q170	1	1	1	HC10006110	IC, TD3404AP or SN7404
Q171	1	1	1	HD20001210	Diode, 1S2473
Q172	1	1	1	HT309452B0	Transistor, 2SC945 P or Q
Q173	1	1	1	HC10008060	IC, μPD861C
Q174	1	1	1	HD10001050	Diode, 1N60
Q175	1	1	1	HD10001050	Diode, 1N60
Q176	1	1	1	HC10014060	IC, μPD547C019
Q177	1	1	1	HD20001210	Diode, 1S2473
Q178	1	1	1	HD20001210	Diode, 1S2473
Q179	1	1	1	HD20001210	Diode, 1S2473
Q180	1	1	1	HD20001210	Diode, 1S2473
Q181	1	1	1	HD20001210	Diode, 1S2473
Q182	1	1	1	HD20001210	Diode, 1S2473
Q183	1	1	1	HC10020060	IC, μPD4049C
Q185	1	1	1	HD20001210	Diode, 1S2473
Q186	1	1	1	HD20001210	Diode, 1S2473
Q187	1	1	1	HD20001210	Diode, 1S2473
Q189	1	1	1	HD20001210	Diode, 1S2473
Q190	1	1	1	HD20001210	Diode, 1S2473
Q191	1	1	1	HD3033090	Zener, WZ-052
Q201	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q202	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q203	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q204	1	1	1	HT107332B0	Transistor, 2SA733 P or Q

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
Q205	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q206	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q207	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q208	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q209	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q210	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q211	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q212	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q213	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q214	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
Q215	1	1	1	HT107332B0	Transistor, 2SA733 P or Q
					P101-COILS
L101	1	1	1	LO10010550	OSC Coil, ORG
L102	1	1	1	LC12240050	Choke Coil, 220μH
L103	1	1	1	LO10290010	OSC Coil, BLK
L104	1	1	1	LY4024008D	Relay, MY4-02-US-L
L105	1	1	1	LO10010560	OSC Coil, BLK
					P101-MISCELLANEOUS
J101	1	1	1	YP10002060	Plug, 10P
J102	1	1	1	YP10002000	Plug, 4P
J103	1	1	1	YP10002060	Plug, 10P
J104	1	1	1	YP10002050	Plug, 9P
J105	1	1	1	YP10002040	Plug, 8P
J106	1	1	1	YP10001990	Plug, 3P
J107	1	1	1	YP10002030	Plug, 7P
J108	1	1	1	YP10002060	Plug, 10P
X101	1	1	1	XA105001L3	Crystal, 5.94432 MHz
X102	1	1	1	XA101002L3	Crystal, 5.6623104 MHz

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P300-SWITCH OPERATION CIRCUIT BOARD
P300	1	1	1	YF22720010	P.W. Board, Switch Operation
	1	1	1	ZZ22720010	P.W. Board Assembly
					P300-SEMICONDUCTORS
Q301	1	1	1	HD20001210	Diode, 1S2473
Q302	1	1	1	HD20001210	Diode, 1S2473
Q303	1	1	1	HD20001210	Diode, 1S2473
Q304	1	1	1	HD20001210	Diode, 1S2473
Q305	1	1	1	HD20001210	Diode, 1S2473
					P300-MISCELLANEOUS
S301	1	1	1	SP01010260	Push Switch, Reject
S302	1	1	1	SP01010260	Push Switch, Up
S303	1	1	1	SP01010260	Push Switch, Down
S304	1	1	1	SP01010260	Push Switch, Pitch +
S305	1	1	1	SP01010260	Push Switch, Pitch −
S306	1	1	1	SP01010260	Push Switch, RMS/%
S307	1	1	1	SP01010260	Push Switch, 45
S308	1	1	1	SP01010260	Push Switch, 33
V301	1	1	1	HQ30901060	Display Unit, 33/45% RPM
W301	1	1	1	YU03115210	Jumper Lead, Jumper Lead

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P400-PHOTO UNIT CIRCUIT BOARD
P400	1	1	1	YK22721220	P.W. Board, Photo Unit
	1	1	1	ZZ22721320	P.W. Board Assembly
C401	1	1	1	EE22502550	Elect 2.2μF 25V
R401	1	1	1	GD05223140	Resistor 22kΩ ±5% 1/4W
R403	1	1	1	GD05333140	Resistor 33kΩ ±5% 1/4W
R404	1	1	1	GD05103140	Resistor 10kΩ ±5% 1/4W
R405	1	1	1	GD05102140	Resistor 1kΩ ±5% 1/4W
Q401	1	1	1	HW10001060	Photo Unit, PS4001
Q402	1	1	1	HT309452B0	Transistor, 2SC945 P or Q

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P800-POWER SUPPLY CIRCUIT BOARD
P800	1	1	1	YG22720010	P.W. Board, Power Supply
	1			ZZ22722010	P.W. Board Assembly
		1		ZZ22727010	P.W. Board Assembly
			1	ZZ22728010	P.W. Board Assembly
					P800-CAPACITORS
C801	1	1	1	DK18103510	Ceramic 0.01μF 500V
C802	1	1	1	DK18103510	Ceramic 0.01μF 500V
C803	1	1	1	ED10805010	Elect 1000μF 50V
C804	1	1	1	ED10805010	Elect 1000μF 50V
C805	1	1	1	EA10702590	Elect 100μF 25V
C806	1	1	1	EA10702590	Elect 100μF 25V
C807	1	1	1	EA47502590	Elect 4.7μF 25V
C808	1	1	1	EA47502590	Elect 4.7μF 25V
C809	1	1	1	EA10701090	Elect 100μF 10V
C810	1	1	1	EA33701090	Elect 330μF 10V
C811	1	1	1	EA10701090	Elect 100μF 10V
C812	1			DF17473600	Film 0.047μF ±20% 125V (UL)
C812		1		DF17473590	Film 0.047μF ±20% 125V (CSA)
C812			1	DF17223800	Film 0.022μF ±20% 1000V
C813			1	DF17223800	Film 0.022μF ±20% 1000V
					P800-RESISTORS
R801	1	1	1	GD05102140	1kΩ ±5% 1/4W
R802	1	1	1	GD05102140	1kΩ ±5% 1/4W
R803	1	1	1	GD05242140	2.4kΩ ±5% 1/4W
R804	1	1	1	GA05151020	150Ω ±5% 2W
					P800-SEMICONDUCTORS
Q801	1	1	1	HD20005010	Diode, W06B
Q802	1	1	1	HD20005010	Diode, W06B
Q803	1	1	1	HD20005010	Diode, W06B
Q804	1	1	1	HD20005010	Diode, W06B
Q805	1	1	1	HD30030090	Zener, WZ-177
Q806	1	1	1	HD30030090	Zener, WZ-177
Q807	1	1	1	HT314192B0	Transistor, 2SC1419 B or C
Q808	1	1	1	HT107552B0	Transistor, 2SA755 B or C
Q809	1	1	1	HD30051090	Zener, WZ-058
Q810	1	1	1	HD30033090	Zener, WZ-052
Q811	1	1	1	HT314192B0	Transistor, 2SC1419 B or C
					P800-MISCELLANEOUS
F801			1	FS10050800	Fuse, 500mAT (SEMKO)
F802			1	FS10050800	Fuse, 500mAT (SEMKO)
J807	1	1	1	YL01010040	Terminal, 1P
J808	1	1	1	YL01010040	Terminal, 1P
J809	1	1	1	YL01010040	Terminal, 1P
J810			1	YL01010040	Terminal, 1P
J811			1	YJ08000200	Jack, Fuse Clip
J812			1	YL08000200	Jack, Fuse Clip
J813			1	YJ08000200	Jack, Fuse Clip
J814			1	YJ08000200	Jack, Fuse Clip

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					PV03-CONNECTIVE CIRCUIT BOARD
PV03	1	1	1	YD22240020	P.W. Board, Output Wire Terminal
	1	1	1	ZZ22240020	P.W. Board Assembly

(W01-99)	**Assembly and Wiring**
(T01-99)	**Adjustment**
(X01-00)	**Correction**

11. TECHNICAL SPECIFICATIONS

FOR U.S.A. MODEL ONLY

Drive System	Direct Drive
Drive Motor Type	Full Time Quartz Locked DC Servo
Control Range	±6%
Rumble (NAB RRLL)	-70 dB
Wow and Flutter (WRMS)	0.02%
Tone Arm Length	9.41" (239 mm)
Platter Diameter	12.3" (320 mm)
Stylus Overhang	0.67" (17 mm)
Tracking Force	0 ~ 3 g
Anti-Skating Force	0 ~ 3 g
Maximum Tracking Error	0.16°/cm
Average Tracking Error	0.07°/cm

GENERAL

Power Requirements	120V AC 60 Hz
Power Consumption	18 W
Dimensions	
Width	18-5/8" (474 mm)
Height	5-3/4" (147 mm)
Depth	15" (381 mm)
Weight	22 lbs (10 kg)

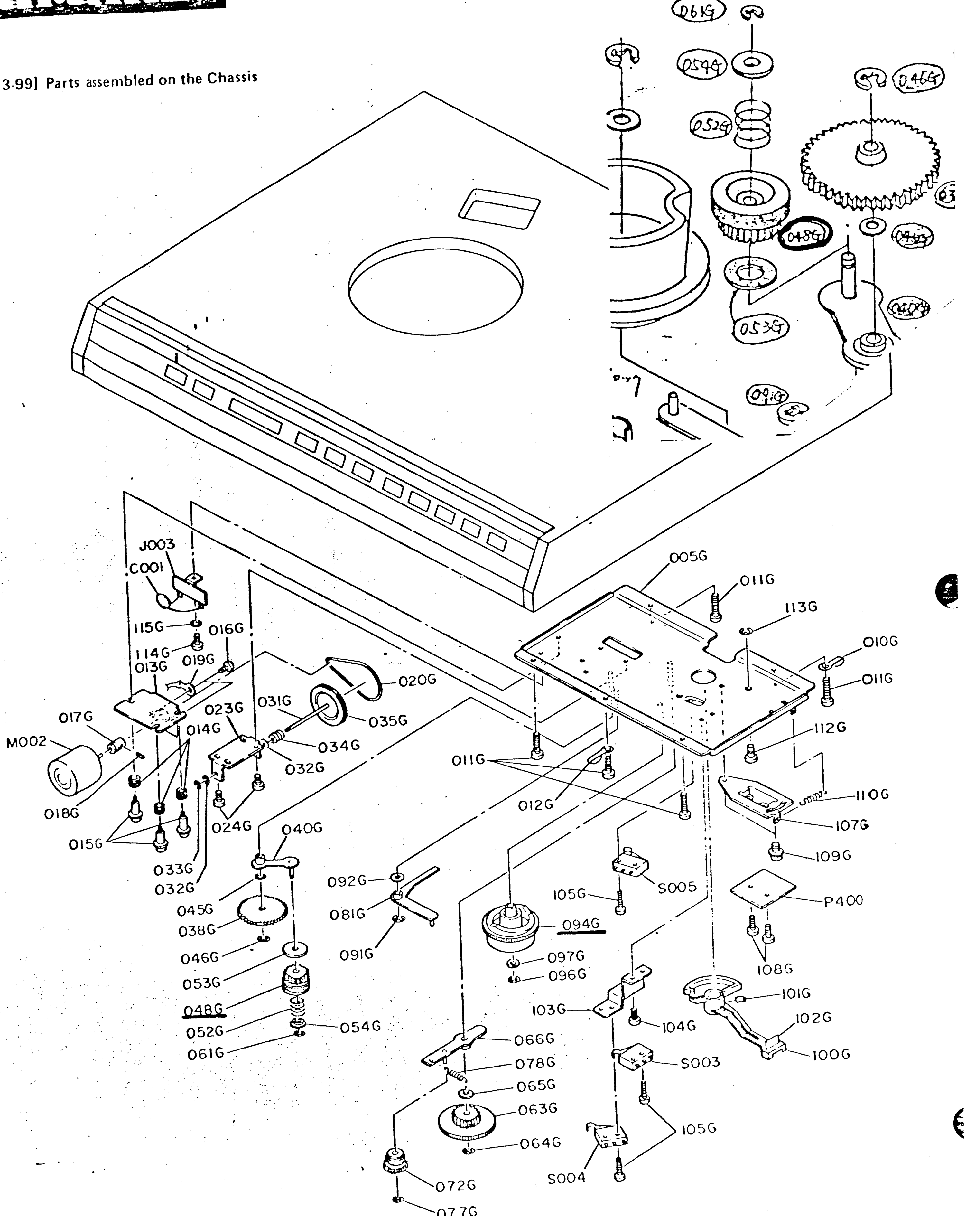
FOR EUROPEAN MODEL ONLY (DIN)

Drive System	Direct Drive
Drive Motor Type	DC, 20-pole, 30-slot
Speed	33-1/3, 45 RPM
Speed Control Range	0.1 Step, ±6%
Rumble	
NAB	70 dB
DIN B WTD	75 dB
Hum Pick-up	60 dB
Wow and Flutter	
NAB	0.020%
DIN 45 507	0.045%
Tone Arm Length	9-7/16" (239 mm)
Overhang	11/16" (17 mm)
Tracking Force	0 ~ 3 g
Anti-Skating Force	0 ~ 3 g
Tracking Error	-2.28° ~ +0.65°
Platter Diameter	12-5/8" (320 mm)
Platter Weight	3.5 lbs (1600 g)

GENERAL

Power Requirements	220V, 50 Hz (This unit can be converted by a qualified technician to operate on 110/220/240V, 50 Hz)
Power Consumption	16 W
Dimensions	
Width	18-11/16" (474 mm)
Height	5-13/16" (147 mm)
Depth	15" (381 mm)
Weight	
Unit alone	22 lbs (10.0 kg)
Packed for Shipment	26.4 lbs (12.0 kg)

[P03-99] Parts assembled on the Chassis


061G
054G
052G
0.46G
048G
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J003
C001
115G
016G
114G
013G
019G
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M002
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P400
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S003
105G
S004
066G
078G
065G
063G
064G
072G
077G

M6370Q SERVICE INFORMATION

Corrective Measures for Arm's up/down Instability

Causes:

1. Slipping develops due to the weak touch of the idler, SYM. NO. 048G, on the cam, SYM. NO. 094G.
2. Slipping develops because the grease on the cam, SYM. NO. 094G, sticks on the idler, 048G.

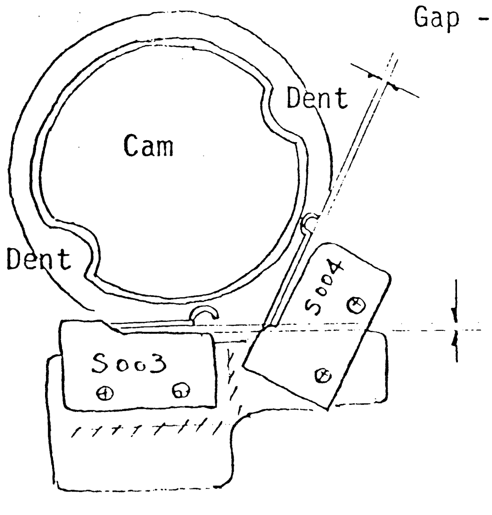
Changes by Corrective Measures:

1. SYM. NO. 048G: To be changed from 2272001520 to 2272001522 (The diameter of the idler will be reduced from 18.0 mm to 17.4 mm)
2. The grease on SYM. NO. 094G will be wiped with a piece of cloth to such an extent that the exudative spread and splashes of the grease can be avoided. Do not use alcohol or thinner for this purpose. Wiping for slight retention of the grease will bring the good result.

Cautions:

The following precautions will be exercised in implementing the said changes:

1. Every care must be taken to keep the new idler free from any touch of the grease.
2. Prior to wiping the grease off the cam, the two micro switches (SYM. NOS. S003 and S004) will have to be removed once. Check to see the following after the switches have been put back:
   - (a) The turning motor (M002) stops without the slipping of the idler (SYM. NO. 048G) when the cam (SYM. NO. 094G) has been held with a hand while the cam is rotating.
   - (b) The motor (SYM. NO. M002) stops without fail when the micro switch lever has got in the dent on the side of the turning cam.



Gap - from 0.8 mm to 1.2 mm

Gap - from 0.8 mm to 1.2 mm